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ABSTRACT

This paper reviews the changing compositions of public expenditures on education in Mongolia during recent economic transitions. It also assesses the impact of economic transition in Mongolia. The study recommends three complementary strategies to provide a more stable resource base to finance education: (1) rationalize public expenditures on education in a variety of ways which are presented; (2) reallocate resources to strengthen basic education, reduce dropouts, improve primary science education, and invest in books and libraries; and (3) mobilize new resources by charging tuition fees at all post-secondary levels, by charging realistic interest rates on student loans, by providing a conducive environment for private schools, and by using foreign assistance. The volume is divided into three chapters: (1) "Achievements and Reforms"; (2) "The Changing Patterns of Public Expenditures on Education"; and (3) "Strategies to Build a Stable Resource Base to Finance Education." The Annexes contain extensive charts and graphs addressing the following: (1) "Employment and Educational Attainment"; (2) "Enrollment"; (3) "Teachers"; (4) "Curriculum"; (5) "Expenditures"; (6) "Organizational Structure and Legal Framework"; and (7) "Donors' Activities in Education." (EH)

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# Mongolia: Financing Education during Economic Transition

Kin Bing Wu

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# Mongolia: Financing Education during Economic Transition

Kin Bing Wu

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Washington, D.C.

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# FOREWORD

Since Mongolia became a member of the World Bank Group on February 14, 1991, the Bank has been directly involved in assisting the country to define a strategy for its transition from a centrally planned to a market-oriented economy. This paper, which discusses implications of this transition for the education sector, is based on the findings of two Bank missions to Mongolia. The first one reviewed public expenditures and assessed private sector development (June 1-12, 1992); the second one provided technical support to assist Mongolia's economic transition (April 19-30, 1993). Both missions were led by Carlos Elbirt. The facts and figures reflect the conditions as of the end of April 1993. This paper is expected to be of interest to those working on reforming formerly socialist economies in general, and Mongolia in particular.

Shahid Javed Burki
Director
China and Mongolia Department

## ABSTRACT

This paper reviews the changing compositions of public expenditures on education in Mongolia during economic transition, assesses the impact of economic transition in Mongolia, and recommends three complementary strategies to provide a more stable resource base to finance education:

- **rationalize public expenditures** on education by reducing stipends and food subsidies, reducing noninstructional staff, increasing student-to-teacher ratios, converting technical and specialized schools into community colleges, and exploring appropriate technologies for heating;

- **reallocate resources** to strengthen basic education, reduce dropouts, improve primary science education, and invest in books and libraries; and

- **mobilize new resources** by charging tuition fees at all post-secondary levels, by charging realistic interest rates on student loans, by providing a conducive environment for private schools, and by using foreign assistance.

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Kin Bing Wu

## ACRONYMS, ABBREVIATIONS AND MONGOLIAN TERMS

| | | |
|---|---|---|
| Aimag | - | Province |
| CMEA | - | Council for Mutual Economic Assistance |
| DANIDA | - | Danish International Development Agency |
| GDP | - | Gross Domestic Product |
| GER | - | Gross Enrollment Ratio |
| ger | - | Mongolian Tent |
| GNP | - | Gross National Product |
| IMF | - | International Monetary Fund |
| MOF | - | Ministry of Finance |
| MOSE | - | Ministry of Science and Education |
| MNU | - | Mongolian National University |
| Somon | - | District |
| UNESCO | - | United Nations Educational, Scientific and Cultural Organization |

## CURRENCY EQUIVALENTS

Currency unit = Tugrik (Tug)

Before November 1991:

$1.00 = Tug 7 (barter rate)

As of June 30, 1992:

$1.00 = Tug 40 (for official transaction)
$1.00 = Tug 250 (for free market transaction)

As of April 30, 1993:

$1.00 = Tug 150 (for official transaction)
$1.00 = Tug 420 (for free market transaction)

As of May 27, 1993:

Unified exchange rate based on free-market transaction

## FISCAL YEAR

January 1 to December 31

## SCHOOL YEAR

September 1 - June 1

## TOTAL HOURS OF INSTRUCTION IN SCHOOL YEAR 1990

693

# EXECUTIVE SUMMARY

i. From the time of independence in 1921 to 1990, Mongolia had been a centrally planned economy, with extremely close ties with the Soviet Union. Changes in Soviet domestic and foreign policies enabled Mongolia to change its political and economic systems. In 1990, Mongolia held its first multiparty election, and the new coalition government promised to construct a market-oriented economy. In 1991, the withdrawal of Soviet assistance, which accounted for 30 percent of the GDP for some years, and the collapse of the Council of Mutual Economic Assistance (CMEA), which disrupted external trade, made Mongolia's transition fraught with difficulties. Real GDP fell by 10 percent in 1991 and by a further 7.5 percent in 1992. These external shocks necessitated both strong stabilization measures to reduce large fiscal and external deficits in the short term, and changes in macroeconomic and sectoral policies to facilitate sustainable development in the long term.

ii. This paper reviews the changing compositions of public expenditures on education during the economic transition, assesses the impact of structural adjustment on education, and recommends strategies to strengthen the resource base to finance education.

iii. Mongolia has a rather well-developed human resource base, with an adult literacy rate of 96 percent, and a gross enrollment ratio of 98 percent in primary schools, 85 percent in secondary schools, and 15 percent in tertiary education. These very high levels of educational development were made possible by heavy investment in education. In 1990, education accounted for 17.6 percent of government expenditures and 11.3 percent of GDP. The total state fiscal deficit was about 13.5 percent of GDP.

iv. Between 1990 and 1992, government expenditures and education expenditures were cut by 57.6 percent and 56.0 percent, respectively. The decline in public spending was more than three times as much as the decline in GDP. In 1993, the allocation to education was reduced to 15.2 percent of the state budget, and to 3.8 percent of GDP. This dramatic contraction of public spending on education is seen in a number of austerity measures, which include halting capital investment in education, retrenching non-instructional staff, introducing partial cost recovery for food in kindergarten and boarding schools, reducing clothing subsidies, phasing out the practice of sending students to former CMEA countries, and charging tuition fees in post-secondary and higher education. In addition, schools are encouraged to generate their own revenues through services to enterprises and renting premises. Private education is also encouraged. As a result, private investment in education has grown, particularly at the tertiary level.

v. The composition of public spending in education has changed significantly. Salaries and social security were reduced from 53 percent of the recurrent education expenditures in 1991 to 33 percent in the 1993 budget. Administrative and overhead expenses (including supplies, electricity, heating, transportation), however, rose from 18 percent in 1991 to 35 percent in 1993, overtaking salaries as the largest expenditure item, mainly due to the steep rise in fuel prices. Food subsidies increased from 11 percent

in 1991 to 21 percent in 1993, largely due to the rise in food prices. Student stipends dropped from 9 percent in 1991 to 7 percent in 1993. Funding for books and libraries remained negligible.

vi. The proportion of non-instructional staff remained high, particularly in post-secondary and higher education, and the student-to-teacher ratio became lower due to increasing dropouts, except in higher education.

vii. Dropout and non-enrollment in primary and secondary schools, which were negligible before 1991, became a serious problem in poor and pastoral aimags, and increasingly so in Ulaanbaatar. This is due to privatization of livestock that increases the demand for child labor at home, the withdrawal of food and clothing subsidies in boarding schools that raises the direct cost of schooling, and increasing urban unemployment. In 1993, an estimated 23 percent of children of compulsory schooling age were not in Grades 1-8. If this trend is not reversed, about a quarter of Mongolia's citizens in the future will not have the basic skills necessary to adjust to a rapidly changing society.

viii. Herders' children who attended boarding schools were affected more severely than other children. Enrollment of boarders in 1992 was only half of that in 1989. In sum, those who bear the brunt of structural adjustment are rural children.

ix. Enrollment also declined in kindergarten, vocational education, and post-secondary technical and specialized education. Higher education, however, saw a rise in enrollment because those who can afford to pay tuition fees understand the importance of acquiring new skills in a transitional economy.

x. Three complementary strategies are recommended to provide a more stable resource base to finance education:

- **rationalize public expenditures** on education by reducing stipends and food subsidies, reducing non-instructional staff, increasing student-to-teacher ratios, converting technical and specialized schools into community colleges, and exploring appropriate technologies for heating;

- **reallocate resources** to strengthen basic education, reduce dropouts, improve primary science education, and invest in books and libraries; and

- **mobilize new resources** by charging tuition fees at all post-secondary levels, by charging realistic interest rates on student loans, by providing a conducive environment for private schools, and by using foreign assistance.

# 1. ACHIEVEMENTS AND REFORMS

## A. Background

1.1 From the time of independence in 1921 to the present, Mongolia has made impressive progress in transforming from a nomadic economy to one with an industrial sector, mainly in the production of semiprocessed raw materials. Before 1990, agriculture accounted for about 20 percent of the Gross Domestic Product (GDP), industry for 27 percent, and service for 53 percent.1/ The growth rate of real GDP was 7 percent in 1981-86, and 4.6 percent in 1987-89. Copper and cashmere are the two major stable exports. About half of the population resides in rural areas and half in urban areas.2/ Of the total working population, about 27 percent was in agriculture, 20 percent in industry, 8 percent in construction, 8 percent in transportation, 6 percent in trade, and 28 percent in government, education, health care, research, banking, housing and municipal services (Annex 1.1).

1.2 Before 1990, Mongolia was a centrally planned economy with extremely close ties to the former Soviet Union and the Council for Mutual Economic Assistance (CMEA). Soviet assistance accounted for about 30 percent of GDP for a number of years. This enabled Mongolia to run large fiscal and external deficits, and to have relatively high growth rates.

1.3 Since the former Soviet Union began to liberalize its domestic and foreign policies in the mid-1980s, Mongolia has greater freedom to change its own system. Popular demonstrations in March 1990 led to the country's first multiparty elections in July 1990, and the formation of a new coalition government committed to "construct a market-oriented economy." Economic reforms include privatization of livestock and many public enterprises, price liberalization, and the establishment of new institutions for macroeconomic management. On the diplomatic front, new ties were established, and membership in the World Bank Group and the International Monetary Fund (IMF) was accepted in 1991. In the education sector, sweeping reforms also have been instituted.

1.4 In this process of transformation, Mongolia was severely affected by two major external shocks. First, the Soviet Union terminated its financial and technical assistance to Mongolia in 1991, and was unable to supply on a regular basis essential

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1/ *Mongolia: Toward a Market Economy*, World Bank Country Study, 1992, p. 5-6. The agricultural share of 20 percent of the GDP is taken from footnote 4.

2/ The urban areas are broadly defined as three major cities of Ulaanbaatar, Erdenet, and Darhan, and 18 aimag (provincial) centers.

commodities such as cement, fertilizers, petroleum and spare parts. Second, the collapse of the CMEA in 1991 disrupted Mongolia's external trade. Real GDP fell by 10 percent in 1991 and by a further 7.5 percent in 1992, according to the IMF's estimates. Before 1990, Mongolia's Gross National Product (GNP) was estimated at $1,600 per capita. According to the IMF's reassessment, the GNP per capita was $463, placing Mongolia among the least-developed countries. These external shocks necessitated both strong stabilization measures to reduce large fiscal and external deficits in the short term, and changes in macroeconomic and sectoral policies to restructure the economy and to facilitate sustainable development in the long term.

1.5 It is in this context that this paper reviews Mongolia's achievement in the education sector and its current reform initiatives, examines the changing composition of public expenditures on education, discusses the issues arising from the deepening economic crisis, and makes recommendations to provide a more stable resource base to finance education.

## B. Achievements in Education

1.6 Mongolia has a relatively well-developed human resource base, due to the former socialist policy of emphasizing education. In turn, the educated workforce has made possible Mongolia's economic transformation. In 1989, 96 percent of the working population (those aged 15 and over) was literate, and 7.5 percent had higher education (Annex 1.3). The gross enrollment ratios (GER) were 98 percent in primary schools, 85 percent in secondary schools, and 15 percent in tertiary education (Annex 2.1). These levels of enrollment compare favorably with those in middle-income countries (Table 1.1).

**Table 1.1: Average Gross Enrollment Ratios: Mongolia compared to Various Income Levels, 1989**

| | Primary | Secondary | Tertiary |
|---|---|---|---|
| Mongolia | 98 | 85 | 15 |
| Low-Income | 105 | 38 | 2 |
| Lower Middle-Income | 101 | 54 | 17 |
| Upper Middle-Income | 104 | 56 | 17 |
| High Income | 105 | 95 | 42 |

*Source*: Mission estimates and *World Development Report, 1992*, p. 274.

1.7 Moreover, girls' enrollment is high, particularly at the post-secondary level. In 1993, girls account for 54 percent of the total enrollment in kindergarten, 54 percent in primary and secondary schools, 51 percent in vocational schools, 73 percent in post-secondary technical schools, and 64 percent in higher education institutions (Annexes 2.3

to 2.5). This compares favorably with girls' enrollment in most parts of the world. This is due to a number of reasons—the socialist policy of promoting female education, the demand for male labor in a nomadic economy, the higher mortality rate of boys from teenage onward, and the wage compression that does not particularly reward higher levels of education.

1.8 Given that, in 1989, 42 percent of its 2 million population was under the age of 15, and 66 percent of them lived in aimags (provinces), the very high GER had been made possible by heavy investment in education. In 1992, the education system comprised 806 kindergartens, 679 primary and secondary schools, 41 secondary vocational schools, 23 post-secondary technical and specialized schools, and 28 higher education institutions. Sixty-three percent of the primary and secondary schools were located in the aimags. Dormitory facilities were provided to enable children from nomadic families to attend school. Boarders accounted for 15 to 25 percent of enrollment in most of the aimags (Annex 2.6).

1.9 The total enrollment in 1992 was nearly half a million, or one quarter of the population. Of the student population, 81,800 were in kindergarten, 384,000 in primary and secondary schools, 11,500 in secondary vocational schools, 7,700 in post-secondary technical and specialized schools, 14,000 in higher education (12,200 in universities and 1,500 in higher institutes) (Tables 1.2a and 1.2b). In addition, nearly 3,000 students attended technical and tertiary education in former CMEA countries (Annex 2.10). These foreign-trained graduates staff the academic institutions, government ministries, and public enterprises.

## C. Recent Reforms

1.10 In July 1991, an education law was passed in order to support the democratization process and economic transformation. The law aims at providing greater flexibility and diversification to the education system. Major changes were in the following areas: (a) reorientation of education from communist ideology to national heritage; (b) primary and secondary education; (c) vocational education; (d) post-secondary technical colleges; (e) higher education; (f) private schools; (g) distance education; and (h) open and adult continuous education. Most reform plans are in the process of being implemented, except distance education. Mongolia's new education system is depicted in Figure 1.1.

1.11 **Reorientation of curriculum from communism to national heritage.** A major thrust of the reform is to phase out communist ideology in the curriculum at all levels in order to support the democratic process, and to revive the Mongolian national heritage that was suppressed under communism. The classical Mongolian script has been reintroduced as the national script to replace the Cyrillic script adopted from Russian. The teaching of the classical script has begun with Grade 1 in 1992, and will move up one grade each year. The classical script is used to teach language and social subjects, while the Cyrillic script is introduced in Grade 5 for teaching science subjects.

**Table 1.2a: EDUCATIONAL INSTITUTIONS**

| | 1991-92 Total (State) | 1992-93 (09/25/92) Total | State | Private |
|---|---|---|---|---|
| Kindergarten | 771 | 806 | 771 | 35 |
| Primary and Secondary | 675 | 679 | 679 | - |
| Secondary Vocational | 41 | 41 | 39 | 2 |
| Post-secondary Technical | 32 | 23 | 23 | - |
| Higher Education | 9 | 28 | 12 | 16 |
| Higher Institutes | 4 | 21 | 5 | 16 |
| Universities | 5 | 7 | 7 | - |

**Table 1.2b: ENROLLMENT BY LEVEL OF EDUCATION**

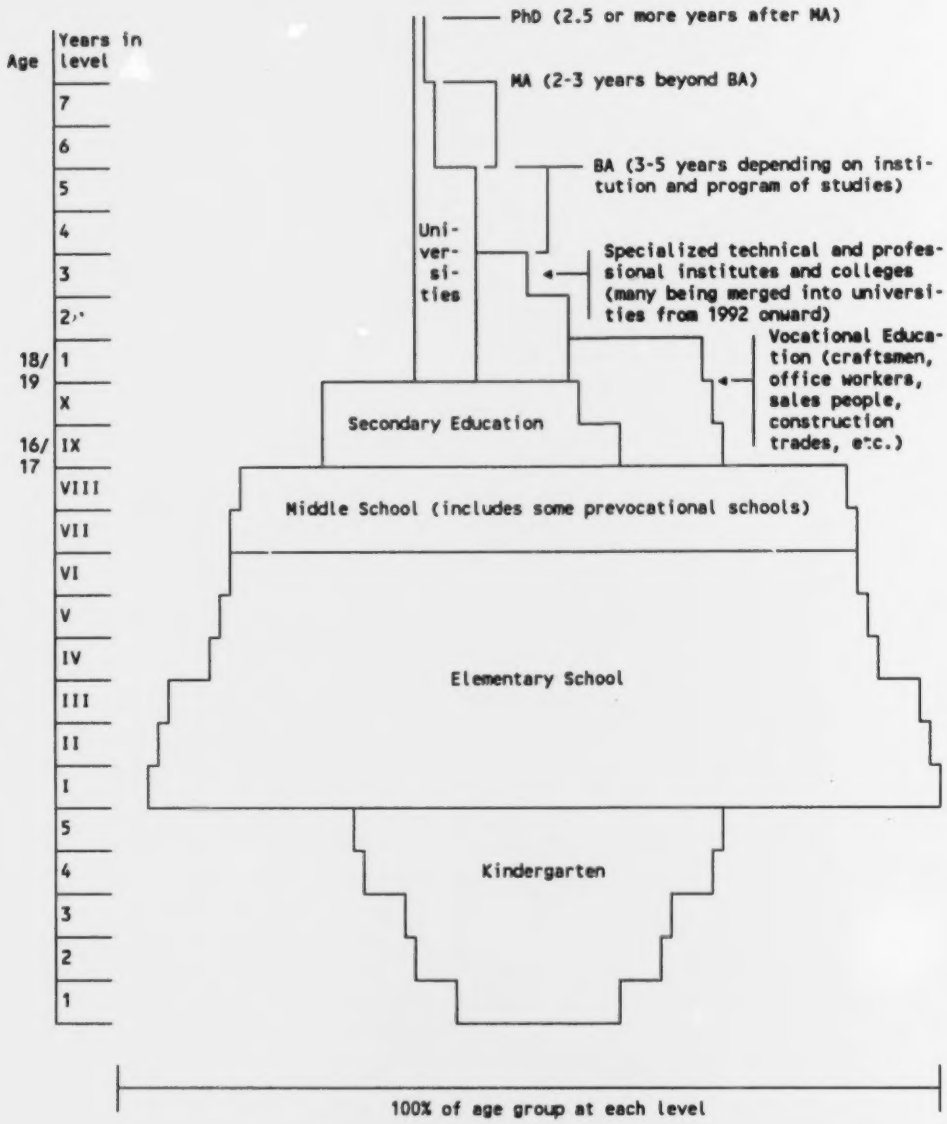
| | 1991-92 Enrollment | % | 1992-93 (09/25/92) Enrollment | Public | Private | % of Public |
|---|---|---|---|---|---|---|
| Kindergarten | 88,811 | 16.8 | 85,691 | 81,817 | 3,874 | 15.5 |
| Primary and Secondary | 401,256 | 76.0 | 384,069 | 384,069 | - | 72.8 |
| Secondary Vocational | 12,534 | 2.4 | 13,328 | 11,537 | 1,791 | 2.2 |
| Post-secondary Technical | 12,789 | 2.4 | 7,749 | 7,749 | - | 1.5 |
| Higher Education | 12,303 | 2.3 | 15,639 | 14,052 | 1,587 | 2.7 |
| Higher Institutes | - | - | 3,384 | 1,587 | 1,797 | - |
| Universities | - | - | 12,255 | 12,255 | - | - |
| Total Enrollment | 527,693 | 100.0 | 506,476 | 499,224 | 7,252 | 100.0 |

*Source*: Ministry of Science and Education.

1.12 **Primary and secondary education** has been restructured from 4+4+2 to 6+2+2. The six years of primary education plus two years of junior secondary education are considered basic education, and will be made free and compulsory for children from the ages of 7 to 14. Students, however, are allowed to leave school after seven years of education. The two years of senior secondary education after basic education will lead to a secondary school completion certificate. Schools for the gifted will be established.

1.13 The emphasis of primary education is on literacy, numeracy, elementary understanding of social and natural environment, respect for adults, basic work and survival skills. The purpose of junior secondary education is to teach social and natural sciences, and to introduce production technology. The main purpose of senior secondary

**Figure 1.1: THE EDUCATIONAL SYSTEM IN MONGOLIA**




*Source*: Seth Spaulding, "The Education System of Mongolia," January 1993, p. 8.

education is to further develop scientific and technical knowledge, and to prepare students for professional, vocational and technical schools. New subjects introduced in secondary education include natural science (previously physics and astronomy were emphasized), history and social studies (previously suppressed), practical arts and home economics, physical education and health, and moral education. The ninth and tenth grades' curricula will have biology, chemistry, geology, and physics, plus a number of diversified vocational



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studies. In some schools, students have the option of taking prevocational courses in lieu of traditional science subjects.

1.14 **Secondary vocational education** is available to students after Grade 8. In the past, secondary vocational education offered two-year and three-year curricula with equal parts of basic studies, training in a specialization, and field work. Beginning in 1991, more emphasis will be placed on specialized studies and less on basic education. Also, a new vocational program will begin from Grades 7 to 10. The local authorities will be given a greater say on the tenth-grade curriculum in order to meet the local needs of employers.

1.15 **Post-secondary technical and specialized schools** were established in 1964 to coordinate with the introduction of mechanized agriculture and industry. They supplied about half of all technical personnel in Mongolia between 1964 and 1990. The national curriculum in the past was determined by the central government. Now, it will be broken up into core subjects, to be set by the Ministry of Science and Education (MOSE), and other subjects, to be set by local authorities. Short courses for in-service training and for the general public will be introduced.

1.16 **Higher education** was also restructured. Before 1990, the Mongolian State University was the only university in Mongolia, and there were eight other higher education institutions. Today, there are five universities, plus a number of institutes and colleges. The Russian Language Institute became the Institute of Foreign Languages and merged with the State Pedagogical Institute to become the Pedagogical University. The Polytechnic Institute, the Agricultural Institute, and the Medical Institute became universities. The Institute of Management became the Institute of Administrative and Management Development and offers postgraduate training.

1.17 A number of specialized institutes once attached to a ministry became colleges. For example, the Economic College, which was once part of the Ministry of Finance, became a higher education institute to train specialists in banking and finance, accountancy and business management. The College of Commerce and Industry, formerly part of the Ministry of Trade and Industry, was established to prepare specialists in business administration. By June 1992, 15 private post-secondary institutions were established. Many of these provide training in foreign languages (English, Japanese, Chinese, Korea, French); others teach business courses (Table 1.2b).

1.18 A Higher Education Reform Commission was set up to coordinate curriculum change, to improve relevance and quality of higher education, and to set up Western equivalency academic programs. Beginning in 1992, universities adopted a new degree structure offering the Bachelor's after five years of study, the Master's after another two years of study, and the Doctorate. Research, which used to be conducted in research institutes under the Academy of Science, is to be integrated with teaching at universities. Some research institutes under the Academy of Science have merged with faculties in the universities. For example, the Economics Research Institute of the Academy of Science has merged with the Economics Faculty of the Mongolian National University (which changed its name from Mongolian State University in 1992). A private foundation was set up to promote the advancement of higher education. Another major change took place

when the State Planning Commission relinquished its control of admissions and setting of enrollment quotas to the universities. Beginning in 1992, each university selects its own students from graduates of 10-year schools and vocational schools, or evening studies.

1.19 **Resource Implications.** The recent reforms have serious resource implications. The introduction of the classical script and new subjects requires the concomitant development of new curricula and textbooks, and retraining of teachers. The decentralization of educational management and increasing autonomy of higher education institutions necessitate staff training to strengthen the planning and management capacity.

1.20 In addition, the reform of higher education needs to be supported by further education of faculty members in advanced industrialized countries, updating and upgrading of curricular, improvement of libraries and laboratories, and establishment of the international comparability of domestic programs of study. At the same time, the proliferation of small-size higher education institutions in recent years is likely to result in diseconomies of scale and the lack of quality assurance. For example, Mongolian National University had only 2,600 students, Pedagogical University 1,600 students, Agricultural University 1,000 students, and Language Institute 741 students. Only Technical University had a student body that is closer in size to the undergraduate student body of some prestigious private universities in the United States. The 16 private higher education institutes together had a student body of 1,800, or an average of 113 student per institution. These institutions will eventually require consolidation in order to attain the economies of scale. At the very least, arrangements for institutions to share libraries and other facilities are necessary to make better use of available resources. Furthermore, it is necessary to establish the accreditation system in order to assure the quality of educational programs and graduates.

1.21 The reform of higher education will eventually call for the reform of senior secondary education because Mongolia's 10 years of primary and secondary schooling are not comparable to 11 or 12 years of schooling offered by many countries in the world. The shorter secondary cycle necessitates curtailing the curriculum, and requires higher education to make up for part of senior secondary education. Even with the introduction of five years of baccalaureate studies, the total years of schooling for a Mongolian university graduate will still be one year shorter than students in most industrialized countries. This raises the question of quality and international comparability, with implications for overseas studies.3/

1.22 All of the above issues have serious financial implications. Unfortunately, the current economic situation is unable to sustain the previous level of educational spending, let alone the new demand for additional resources.

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3/ Nepal, for example, also has 10 years of primary and secondary education. Until recently, senior secondary education at the university preparatory level was provided in university. This has led to the problem of international comparability. In 1992, the government introduced the 10+2 structure, moving the senior secondary education at the university preparatory level to the schools.

## 2. THE CHANGING PATTERNS OF PUBLIC EXPENDITURES ON EDUCATION

2.1 In 1990, at the beginning of the political and economic transition, education claimed the largest share of government expenditures. It accounted for 17.6 percent of the state budget and 11.3 percent of GDP, and employed 10.7 percent of the total workforce 1/ (Annexes 1.1 and 5.1). This level of educational spending was very high by international comparison, although the percentage of Mongolia's population aged 14 and below was comparable to the average in developing countries excluding China and India (Tables 2.1 and 2.2).

2.2 Other social expenditures were social security (7.7 percent of GDP in 1990), health (5.4 percent), housing and community amenities (4.3 percent), general public services (3.1 percent), and recreation, culture, and religious affairs and services (2.0 percent). Defense accounted for 4.5 percent of GDP, public order and safety for 1.0 percent, and economic affairs for 21.8 percent.2/ Total public expenditures amounted to 64 percent of GDP, and the budget deficit to about 13.5 percent of GDP3/ (Annex 5.1).

2.3 After the Soviet Union terminated its assistance and the collapse of CMEA disrupted external trade, total government expenditures as a percentage of GDP were reduced to 58.4 in 1991, and 32.8 in 1992. Public spending on education as a percentage of GDP declined to 10.3 in 1991, and 6.0 in 1992. In 1993, the state budget was estimated to be about 25.0 percent of GDP.4/ Allocation to education was reduced to 15.2 percent of the 1993 budget, or 3.8 percent of GDP, which is comparable to education spending in low-income economies (Tables 2.1 and 2.2).

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1/ These figures are revised IMF and World Bank estimates, which are different from the earlier ones reported in *Mongolia: Toward a Market Economy*, World Bank Country Study, Washington, D.C.: The World Bank, 1992, pp. 12 and 82.

2/ Ministry of Finance figures.

3/ IMF and World Bank estimates.

4/ World Bank estimates.

**Table 2.1: PUBLIC EXPENDITURES ON EDUCATION AS A PERCENTAGE OF TOTAL PUBLIC EXPENDITURES AND AS A PERCENTAGE OF GDP**

| | GDP | Total public expenditures | Public expenditures on education | Total public expenditures as as % of GDP | Education expenditures as a % of total public expenditures | Education expenditures as a % of GDP |
|---|---|---|---|---|---|---|
| | (Million Tugriks) | | | (Percentage) | | |
| Current Prices | | | | | | |
| 1990 | 10,514.0 | 6,744.0 | 1,182.9 | 64.1 | 17.6 | 11.3 |
| 1991 | 18,913.0 | 11,050.0 | 1,955.8 | 58.4 | 17.7 | 10.3 |
| 1992 (Preliminary) | 51,754.0 | 16,965.0 | 3,084.0 | 32.8 | 18.2 | 6.0 |
| 1993 (Budget) | 219,957.0 | 55,000.0 | 8,376.0 | 25.0 | 15.2 | 3.8 |
| Constant 1990 Prices /a | | | | | | |
| 1990 | 10,514.0 | 6,744.0 | 1,182.9 | 64.1 | 17.6 | 11.3 |
| 1991 | 9,428.2 | 5,508.5 | 975.0 | 58.4 | 17.7 | 10.3 |
| 1992 (Preliminary) | 8,724.9 | 2,860.0 | 519.9 | 32.8 | 18.2 | 6.0 |
| 1993 (Budget) | 8,605.6 | 2,151.8 | 327.7 | 25.0 | 15.2 | 3.8 |
| Change in Real Terms (Percentage) | | | | | | |
| 1990-91 | -10.3 | -18.3 | -17.6 | | | |
| 1991-92 (Preliminary) | -7.5 | -48.1 | -47.9 | | | |
| 1992-93 (Budget) | -1.4 | -24.8 | -37.0 | | | |
| 1990-92 (Preliminary) | -17.0 | -57.6 | -56.0 | | | |

/a The GDP deflator was estimated to be 100.6 percent in 1991, 195.7 percent in 1992, and 330.9 percent in 1993, over the previous year, respectively. The constant 1990 prices were calculated from an index of the GDP.

*Source*: Ministry of Finance, and IMF and World Bank estimates.

2.4 While GDP fell by 17.0 percent in real terms between 1990 and 1992, there was more than a three-fold decline in total government expenditures and education expenditures, which were cut by 57.6 percent and 56.0 percent, respectively. (Table 2.1).

2.5 This dramatic contraction of public spending on education is seen in a number of austerity measures, which include halting capital investment in education, retrenching non-instructional staff, introducing partial cost recovery for food in kindergarten and boarding schools, reducing clothing subsidies, reducing the number of students sent to former CMEA countries, and charging tuition fees in post-secondary and higher education. In addition, schools are encouraged to generate their own revenues through services to enterprises and renting premises. Private education is also encouraged. As a result, private investment in education, particularly at the tertiary level, has grown. The impact of these cuts is examined in the following section.

**Table 2.2: INTERNATIONAL COMPARISON**

| Country Income Level | Median public expenditures on education as a % of GNP (1985) | Median public expenditures on education as a % of total public Expenditures (1985) | % of population aged 14 and below (1990) |
|---|---|---|---|
| Low (Including China & India) | 3.2 | 15.3 | 35.2 |
| Low (Excluding China & India) | 2.9 | 12.5 | 42.5 |
| Lower-Middle | 3.9 | 13.9 | 37.6 |
| Upper-Middle | 4.3 | 14.9 | 35.8 |
| High | 5.8 | 13.2 | 19.9 |

*Source*: *World Development Report 1992*, pp. 268-9; Lockheed and Verspoor, 1991, pp. 33 and 325-329.

## A. PUBLIC EXPENDITURES ON EDUCATION IN 1991

2.6 In 1991, the recurrent expenditures accounted for 90 percent of the total public expenditures on education, and capital expenditures for 10 percent.6/ This is similar to the pattern in most countries and much of the recurrent expenditures are usually spent on personnel cost because of the personal interaction required in teaching and learning. However, in Mongolia, salaries accounted for only 46.5 percent of the recurrent education expenditures, and social security payment, which is 13.5 percent of the salaries contributed by the employer, for 6.5 percent. This is largely due to wage compression in the formerly socialist system. In comparison, in the 1980s, the median percentage share of teachers' salaries in the recurrent education expenditures was 95 percent in low-income economies, 91 percent in lower-middle-income economies, 88 percent in upper-middle-income economies, and 76 percent in high-income economies.7/

2.7 Items that particularly stood out in Mongolia's education expenditures were food and student stipends. They accounted for 11.3 percent and 9.1 percent, respectively, of the recurrent expenditures. Funding for books and libraries was a negligible

6/ This paper focuses on the changes in percentage share of education expenditures within government expenditures, and the changes in the percentage share of major components within government expenditures from 1991 to 1993 because they remain the same whether current or constant prices were used. Because the estimates for the budget have been adjusted frequently for changes in exchange rates and for salary increases, these figures should be taken as very rough estimates.

7/ Adriaan Verspoor and Kin Bing Wu, "Textbooks and Education Development." World Bank, Population and Human Resources Department, Education and Employment Division, Background Paper Series, PHREE/90/31, Washington, D.C., 1990, p. 12.

0.3 percent, and administrative and overhead expenses (including supplies, electricity, heating, and transportation) claimed 18 percent of the recurrent expenditures (Table 2.3).

**Table 2.3: EDUCATION EXPENDITURES BY FUNCTION, 1991**
(Million Tugrik, Current Prices)

| | Local | | Central | | Total | |
|---|---|---|---|---|---|---|
| | Tugrik | % | Tugrik | % | Tugrik | % |
| Recurrent Expenditures | | | | | | |
| Personnel expenses | 808.0 | 57.4% | 121.9 | 35.1% | 929.9 | 53.0% |
| Salaries | 711.4 | 50.6% | 104.0 | 29.9% | 815.4 | 46.5% |
| Social security tax | 96.6 | 6.9% | 17.8 | 5.1% | 114.4 | 6.5% |
| Admin. & overhead | 273.3 | 19.4% | 46.8 | 13.4% | 320.1 | 18.2% |
| Travel | 5.9 | 0.4% | 0.4 | 0.1% | 6.3 | 0.4% |
| Practical subject expenses | 13.1 | 0.9% | 22.0 | 6.3% | 35.1 | 2.0% |
| Research & study tour | 0.5 | 0.0% | 0.5 | 0.1% | 1.0 | 0.1% |
| Books & reading materials | 3.9 | 0.3% | 0.9 | 0.3% | 4.8 | 0.3% |
| Food | 181.5 | 12.9% | 17.7 | 5.1% | 199.2 | 11.4% |
| Student allowance | 57.4 | 4.1% | 101.7 | 29.3% | 159.1 | 9.1% |
| Medicine | 0.3 | 0.0% | 0.1 | 0.0% | 0.4 | 0.0% |
| Furniture & facilities | 22.3 | 1.6% | 4.2 | 1.2% | 26.6 | 1.5% |
| Clothing & sheet | 6.5 | 0.5% | 4.8 | 1.4% | 11.4 | 0.6% |
| Maintenance | 17.3 | 1.2% | 5.1 | 1.5% | 22.4 | 1.3% |
| Others | 8.7 | 0.6% | 10.4 | 3.0% | 19.1 | 1.1% |
| Saving | 2.3 | 0.2% | 0.0 | 0.0% | 2.3 | 0.1% |
| Subsidies (school products) | 2.7 | 0.2% | 8.1 | 2.3% | 10.8 | 0.6% |
| Evening courses | 1.9 | 0.1% | 0.0 | 0.0% | 1.9 | 0.1% |
| Education activities | 1.7 | 0.1% | 0.0 | 0.0% | 1.7 | 0.1% |
| Local courses & practical subjects | 0.0 | 0.0% | 2.9 | 0.8% | 2.9 | 0.2% |
| Total Recurrent Expenditures | 1,407.3 | 100.0% | 347.6 | 100.0% | 1,755.0 | 100.0% |
| Capital Expenditures | | | | | | |
| Investment (building equipment) | 158.1 | | 42.7 | | 200.8 | |
| Total Capital Expenditures | 158.1 | | 42.7 | | 200.8 | |
| Total Expenditures | 1,565.4 | | 390.3 | | 1,955.8 | |

Source: Ministry of Finance

2.8 In Mongolia, the public expenditures on primary and secondary education were aggregated together; so it was difficult to compare with those in other countries. However, expenditures of other levels of education were treated separately. After personnel cost, food claimed the biggest share (28 percent) of kindergarten's expenditures, and student stipends accounted for 13 percent of the expenditures on vocational education, 44 percent of those in post-secondary technical education, and 31 percent of those in higher education (Annex 5.2).

2.9 An examination of the deployment of staff found inefficient use of resources. For example, teachers 8/ accounted for 53 percent of the total staff employed in primary and secondary education, 45 percent in vocational schools, 40 percent in technical and post-secondary schools, and 45 percent in higher education (Annex 3.3). By comparison,

8/ The mission considers as teachers only those directly involved in classroom teaching. MOSE, however, includes administrators (such as principles) as teaching staff as well. In this paper, teachers are referred to as those directly involved in the instructional process.

in a number of middle-income countries, such as Venezuela, as well as New York State, United States, teachers account for about 66 percent of the total workforce in education; and in the newly industrialized countries of East Asia, teachers account for 75 percent of the staff.

2.10 Moreover, the student-to-teacher ratio was low. In primary and secondary education, it was 20:1. Considerable variations in the student-to-teacher ratio existed between aimags and cities at all levels of education, largely due to dispersion of population in the rural areas. For example, in 8-year schools, the student-to-teacher ratio was 32:1 in the cities and 18:1 in aimags. In 10-year schools, it was 28:1 in the cities and 20:1 in the aimags (Annex 3.1). These ratios were low by international comparison. For example, the average primary school student-to-teacher ratio was 38:1 in low-income countries, 23:1 in lower-middle-income countries, 25:1 in upper-middle-income countries, and 18:1 in high-income countries.9/ Mongolia's student-to-teacher ratio can be increased by combining classes in urban areas wherever possible, and by using multigrade teaching in rural areas.

2.11 The average student-to-teacher ratio was 16:1 in vocational schools, and 11:1 in post-secondary technical schools, with much variation among institutions (Annex 3.2). A key factor affecting the student-to-teacher ratio in vocational and technical education is how many students the workshop can accommodate and how training is organized. Alternative ways of training, such as the apprenticeship scheme conducted in conjunction with industry, can be explored to improve the ratio.

2.12 In higher education, the student-to-teacher ratio was 10:1. In universities in high-income and upper-middle-income countries, a ratio of 10-20:1 is common. However, in the College of Engineering in Seoul National University in the Republic of Korea, a preeminent institution, the ratio was 30:1 in 1992. Judging from the student-to-teacher ratio, Mongolian higher education still has the capacity to expand enrollment in order to educate those who would have studied in the former CMEA countries.

2.13 These findings led the mission to recommend the following measures to rationalize the public expenditure on education: (a) reduce noninstructional staff (by hiring freeze and natural attrition); (b) increase student-to-teacher ratio (by hiring freeze, by combining classes in urban areas wherever possible, by using multigrade teaching in rural areas, and by increasing enrollment in higher education)10/; (c) ask for in-kind

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9/ *World Development Report 1992*, pp. 274-5.

10/ This recommendation was based on research findings that larger class size does not affect academic achievement adversely. For example, 13-year-olds in the Republic of Korea and Taiwan (China) on average scored above other industrial countries in international assessment of mathematics and science in 1991. The average class size in Korea is 36 students, and that in Taiwan (China) is 44. See *Learning Science* and *Learning Mathematics*, The International Assessment of Educational Progress, Educational Testing Service, February 1992. Also see Marlaine Lockheed and Adriaan Verspoor, *Improving Primary Education in Developing Countries*, Oxford University Press, Published for the World Bank, 1991.

contribution in boarding schools (such as asking parents to provide one or two sheep for milk to supplement the nutritional needs of the child, but the sheep can be returned to the family upon the child's graduation); (d) phase out stipends for domestic and overseas students; and (e) charge tuition fees in post-secondary technical and higher education, and to introduce a student loan scheme and merit scholarship to assist students to finance their education. These recommendations were adopted by the government in the second half of 1992.

### B. Austerity Measures

2.14 **Austerity Measures**. The economic crisis deepened in 1992. Before 1991, the official barter rate was Tug 7 to $1. In mid-1992, the market rate was Tug 250 to $1; by April 1993, it was Tug 420 to $1. The consumer price inflation rose from 120 percent in 1991 to 202 percent in 1992, and is projected to increase to 291 percent in 1993. MOSE implemented the following measures to cut expenses and recover costs.

2.15 First, MOSE encouraged educational authorities at all levels to generate their own revenue through works and services to the community and enterprises. Such services include training workers for enterprises and renting out classrooms to private schools. This does not include charging tuition fees.

2.16 Second, MOSE established the principle of cost-recovery and urged all post-secondary education institutions to charge tuition fees to cover the cost of teachers' salaries. The tuition fee ranged from Tug 1,500-2,000 per month. Students with good results in the first two quarters, however, are exempted. A student loan scheme is to be implemented by the academic year of 1993-94 to provide financial support to some 30,000 students.

2.17 Third, MOSE refrained from sending students to former CMEA countries. Graduates were brought back. The total number of overseas students in 1993 are less than half of that in 1989. Only those who study in Russia receive Mongolian stipends (1,500 rubles or Tug 800 per month); others are on scholarships of foreign governments. However, paying for the train fare for graduates to return home remains a considerable cost. In addition, the government still pays third-year students the train fare for summer home visit.

2.18 Fourth, food subsidies were reduced drastically. Kindergartens, which used to provide free meals, charged 50 percent of the cost of food, at about Tug 30 per child per day. Boarding schools also charged full price for meat, although not for other food items. This is the equivalent of three sheep per year. Clothing subsidies for boarding schools, which were not a big item, were phased out. The plan is to eliminate subsidies for all food items for boarding schools by 1993-94.

2.19 Fifth, 1,523 schools at all levels of education in the country were asked to reduce the number of their noninstructional staff. On average, each school in the aimag reduced two to three staff, and those in Ulaanbaatar four to five staff. In total, 4,389

noninstructional staff were retrenched. This retrenchment, plus over 1,100 teachers or 5 percent of the total teaching force who left the profession voluntarily, led to a reduction of the number of public education sector employees by 10 percent of the 1991-92 level. As a result, the percentage share of salaries and the social security tax declined substantially.

2.20 Sixth, because of the steep rise in energy prices, overhead cost quickly rose to the level of salaries, thereby crowding out expenditures on other items. Some somons (districts) were unable to pay teachers' salaries in winter. MOSE thus closed 80 schools or 18.8 percent of the 426 rural schools during winter months in order to reduce the overhead cost. Of these, 62 schools11/ were closed from December 1, 1992 to March 31, 1993, and 18 schools for a month in January 1993.12/

2.21 These savings totaled Tug 1 billion (Table 2.4). They were, however, offset by increase of teachers' salaries. A teachers' strike over low salaries in November 1992 forced the government to raise their salaries by 70 percent in December 1992. On February 1, 1993, salaries were raised again by over 100 percent as part of the overall pay increase in the civil service. Certain categories received higher salary increases (Annex 3.8).

**Table 2.4: SAVINGS DUE TO AUSTERITY MEASURES, 1992**

| | Million Tugrik | Percentage of total |
|---|---|---|
| Revenue Generation from Own Sources | 15.2 | 1.5 |
| Reduction of Staff | 137.0 | 13.2 |
| Reduction of Food Subsidies in Kindergartens | 160.3 | 15.5 |
| Reduction of Food Subsidies in Boarding Schools | 210.1 | 20.3 |
| Reduction of Stipends | 48.7 | 4.7 |
| Savings from Energy Expenses | 462.3 | 44.7 |
| Savings from Organization Sources | 1.3 | 0.1 |
| Savings from Management | 5.5 | 0.5 |
| Total | 1,034.9 | 100.0 |

*Source*: Ministry of Science and Education.

11/ These included 14 in Bayan-Olgiy, 12 in Uvs, 12 in Bayanhongor, 5 in Ovorhangay, and 6 in DundGobi.

12/ In addition to these closed schools, 75 rural schools are located outside the supply route, and have to buy their own fuel.

## C. Impact on Education and Policy Implications

2.22 The austerity measures affect education in two major ways: (a) teacher attrition, and (b) student enrollment at various levels of education. Both have policy implications. A shortage of teachers will affect the supply of education. High dropout and nonenrollment rates will retard the process of human capital formation, which is essential to ensure future development and to lessen the burden on society.

2.23 **Teacher Attrition.** In 1992, over 1,100 teachers or 5 percent of the teaching force left teaching in the public sector. The critical policy questions are whether this affects the supply of education, and whether a hiring freeze should be maintained as part of the austerity measures. An analysis of the reasons for leaving found that 570 went to private schools, 244 went to other fields, and 355 left for other reasons such as migration to Kazakhstan, reflecting the opening up of new opportunities in recent years.

2.24 MOSE estimated that two-thirds of the teachers who left public sector teaching were in the cities and one-third in the aimags. There was a much greater movement of teachers and even net gains in richer aimags like Selenge and Tov and in cities of Darhan, Ulaanbaatar, and Erdenet. By contrast, there was little movement of teachers in poor aimags like Bayanhongor and Dundgobi because few employment opportunities existed outside of teaching (Annex 3.7).

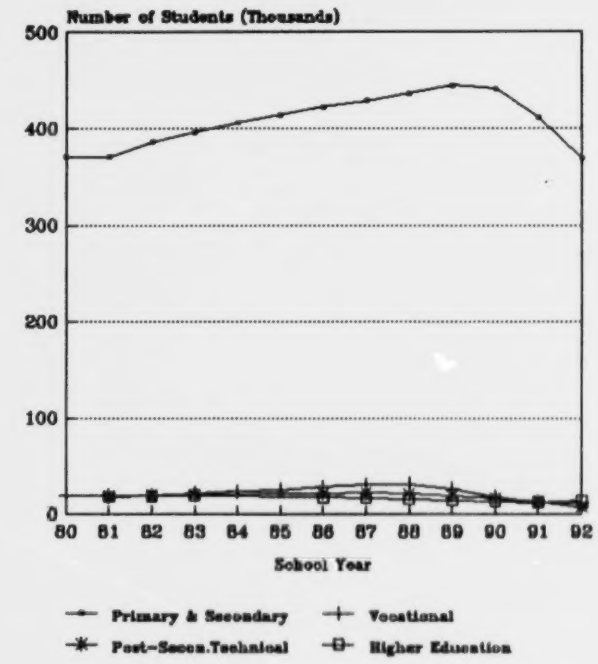
2.25 Given that cities and richer aimags have lost and gained more teachers, the student-to-teacher ratio is not likely to change very much. In the poorer aimags, since teachers remain in the profession but the dropout rate has risen substantially, the student-to-teacher ratio is likely to be lower. Judging by the aggregate movement of teachers, it does not appear that there is a severe shortage of teachers that will affect the supply of education. However, the extent of teacher absenteeism and its impact on education remains unclear.

2.26 As to the question of a hiring freeze, it is necessary to review the movement of teachers by *subject* and by region, and to consider institution by institution. Without information on the numbers of teachers leaving by subject and by school, it is not advisable to lift the freeze.

2.27 **Student Enrollment.** The austerity measures have differential impact on various levels of education, and on population with different income levels. The **adverse impact was strongest in primary and secondary education**, although it remains free of charge to all relevant age children. The dropout rate rose from 0.8 percent in 1989 to 4.9 percent in 1991-92, and 3.9 percent in the first three months of 1992-93 (Annex 2.7). MOSE estimates that 93,000 children are not in school in 1993, not counting those whose schools were closed in winter. The mission estimates that about 105,000 or 23 percent of children who should be in Grades 1-8 are not in school (Annex 2.2). In a country that had attained universal enrollment for Grades 1-8, such a large number of out-of-school children signaled a breakdown of the system.

2.28 The enrollment trends from 1980 to 1992 clearly show a downward slope from 1990 onward at all levels of education, except in higher education, after a steady increase by the second half of the 1980s (Figure 2.1). The GER in Grades 1 to 3 fell from 100 percent in 1989 to 74-83 percent by the end of 1992 (Annexes 2.1 and 2.2).

**Figure 2.1: ENROLLMENT TRENDS, 1980-92**




Source: Ministry of Science & Education
1992 data were as of 12.25.92.

2.29 MOSE officials attributed the causes of dropping out to privatization of livestock, reduction of food and clothing subsidies in boarding schools, and the lack of teachers in schools. The above analysis of the movement of teachers does not support the proposition that the lack of teachers is a major cause, although the extent of teacher absenteeism and its impact on dropouts remain unclear. This leaves the first two reasons as the most plausible explanations for the rise in dropouts. These two reasons operate on the demand side. Privatization of livestock has led to increasing demand for child labor at home, thereby raising the opportunity (indirect) cost of schooling; the reduction of food and clothing subsidies in boarding schools has increased the direct cost of education. A substantial increase in the direct and indirect cost of schooling in turn dampens the demand for education. These two factors have interacted with the lack of demand for skilled labor, which lowers the benefits of schooling, thereby reducing the demand for schooling.

2.30 The lack of data on the effects of structural adjustment on the income of parents and their ability to pay for children's schooling makes it difficult to pinpoint the causes of dropping out. Nonetheless, some circumstantial evidence is available. Livestock in collective farms were privatized in 1991. The total number of livestock allocated to a household may vary from some 30 to 300.13/ In that year, the average dropout rate in the aimags was nearly 7 percent, while that in the cities was 1 percent (Annex 2.7). The highest dropout rates were in DundGobi (17 percent), Ovorhangay (11 percent), Gobi-Altay (10 percent), Hentiy (10 percent), Hovsgul (9 percent), Arghangay (8 percent), and Uvs (8 percent). Except DundGobi and Gobi-Altay, which were poor aimags, the rest were rich in pasture. This pattern of dropout appears to support the proposition that privatization was the cause in 1991.

2.31 The pattern of dropout in 1992-93 reflected a more complicated set of issues. Many children stayed out of school from the start: enrollment in that school year declined by 6.7 percent of the previous year's level, even with an over 2 percent increase of the relevant age group. Therefore, those who attended school and then dropped out were the more persistent ones. In the first three months of 1992-93, the average dropout rate in aimags declined to 4.5 percent, while that in cities rose to 2.8 percent. Dropout rates were highest in poor aimags like Bayanhongor (10 percent) and Sukhbaatar (nearly 9 percent). Dropout rates were also high in pastoral aimags like Ovorhangay (over 9 percent), but relatively low in more densely populated aimags like Selenge (2 percent). Dropout rates were higher in Ulaanbaatar (3 percent) than in industrial cities like Erdenet (0 percent) and Darhan (2 percent) (Annex 2.7). This distribution pattern appears to indicate that elimination of meat and clothing subsidies is a cause for dropout in poor and pastoral aimags, and urban unemployment is a cause for dropout in the cities.

2.32 The most alarming trend is the very high dropout rates in the first three grades. Highest on the dropout list in Grade 1 are Ovorhangay (12 percent) and Bayanhongor (10 percent); in Grade 2, Chor (50 percent), Sukhbaatar (13 percent), Ovorhangay (11 percent), and Bayanhongor (10 percent); and in Grade 3, Sukhbaatar (16 percent), Ovorhangay (9 percent), and Bayanhongor (9 percent). This distribution of dropouts for Grades 1-3 corresponds with the distribution for Grades 1-10 (Annex 2.9). The distribution of dropouts clearly shows that the rural areas are affected more severely than the urban areas, and the remote aimags more so than the aimags closer to the major cities and railway lines. It is unclear whether there is a gender difference in the pattern of dropouts.

2.33 Moreover, boarding schools are affected more severely than other schools. Enrollment of boarders in 1992 was only half of that in 1989, showing the obvious impact of the austerity measures. In 1992-93, schools charged full prices for meat, which was the equivalent of three sheep for a year. A sheep cost about Tug 4,400 in the retail market, and three sheep cost a total of Tug 13,200. This is about half of the annual salaries of the

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13/ According to Mr. Orgil of the Mongolian Embassy in Washington, D.C., livestock was allocated to households according to their contribution to the collective farms in the 1950s and 1960s.

lowest-level government employees. For a poor household with 30 animals 13/ and five children, providing three sheep for each child will cost half of the family's total assets. In addition, the household will have to provide clothing and boots. When full cost recovery is introduced in 1993-94 for other nonmeat food items, enrollment is likely to decline even more. In sum, **those who bear the brunt of adjustment are rural children** (Figure 2.2).

**Figure 2.2: ENROLLMENT IN BOARDING SCHOOLS 1985-92**

Source: Ministry of Science & Education

2.31 Nonenrollment and dropout from basic education warrant policy intervention for two reasons. First, the Mongolian constitution guarantees universal access to basic education, defined as six years of primary education and two years of junior secondary education. Second, basic education provides the broad foundation of literacy, numeracy, and problem-solving skills without which individuals will have little opportunity to continue to improve themselves at later stages in life. Basic education is critical to improving personal and family health, agricultural and industrial productivity, and the environment. Moreover, basic education has a positive impact on intergenerational mobility: better-

13/ In Mongolia, it is not unusual that 10-20 percent of livestock perish every winter. For the rural poor, there is little safety net to cushion the impact of natural disasters.

educated parents provide higher-quality care and facilitate academic achievement of their children. For these reasons, it should be a policy priority to prevent dropouts and to improve the quality of basic education by providing cost-effective inputs, such as textbooks and teachers' guides, and by targeting the poor for assistance, such as providing subsidies for food, clothing and writing materials. Because the demand for schooling is highly related to labor market conditions and overall economic growth, declining enrollment can be reversed when the employment prospects improve. How to bring that about is beyond the scope of this paper, which focuses primarily on the supply side of educational services. Nonetheless, policymakers need to take account of the linkage between education and the labor market.15/

2.35 **Post-secondary technical and specialized schools** also saw a steep decline in enrollment by nearly 40 percent from the previous year's level. This may be attributed to the charging of tuition fees in that year, without being accompanied by a student loan scheme. Those who cannot afford to pay therefore stay away from school. As to the policy implications of this trend, since this level of education is supposed to serve the needs of the economy, it is important to allow enrollment to be driven by demand, rather than by supply. More discussion will be provided in the subsection on labor market linkage.

2.36 The number of **students studying abroad** also declined sharply (Figure 2.4); in 1992-93, less than 3,000 students study abroad (Annex 2.10). The government will continue to provide stipends to students in Russia and pay for the train fare for all to return home after graduation. In addition, the government also pays third-year students in Russia for home visit in the summer, while continuing to pay their stipends during their home visit. Moreover, the government plans to increase the stipends of those studying in Russia, which is substantially below what Russian students get. In view of the economic crisis, home visit payment is hard to justify in the interest of cost saving.

2.37 In **domestic higher education**, enrollment has increased by about 8.5 percent. In addition, more than 1,500 students enroll in private higher education institutions. In both public and private institutions, students have to pay fees of up to Tug 20,000 per year, which is the equivalent of an average worker's annual salary. This increase in enrollment reflects the perceived private rate of return to higher education. Students are willing to pay high fees in order to acquire skills required in a transitional market economy. At the same time, those who are willing to pay are those who can afford to pay. Anecdotal evidence shows that these young people are from privileged families, for example, with a parent working in a foreign embassy, or engaging in import and export trade. In the absence of a student loan scheme and needs-based, means-tested grants to the poor, young people from poor families would not be able to attend school, and, will not acquire new skills necessary to better themselves.

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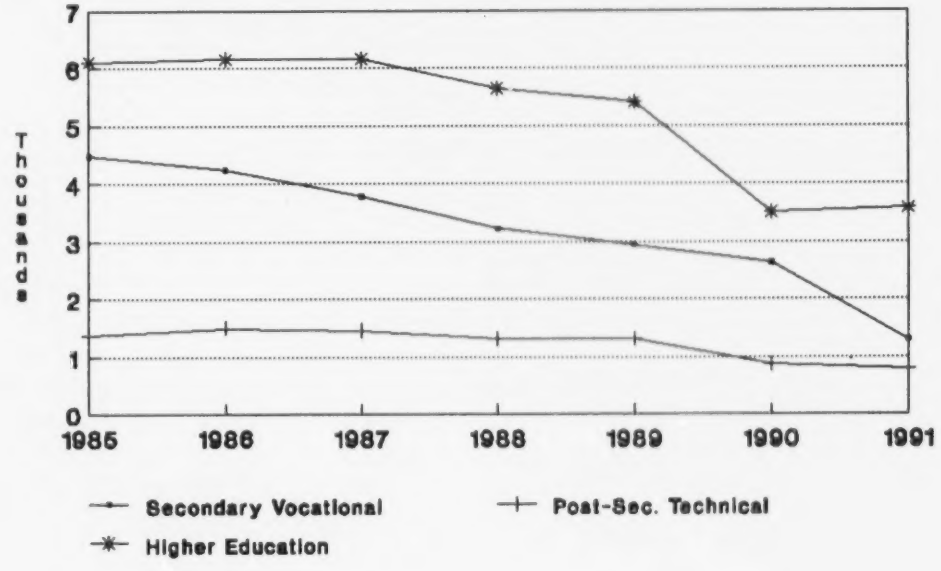
15/ Anderson, Kathryn H., Elizabeth King, and Yan Wang, 1993. "Feedback Effects of the Labor Market on Schooling Choice in Malaysia." Paper presented at the April 1993 meetings of the Population Association of America, Cincinnati, Ohio.

**Figure 2.3: STUDENTS STUDYING ABROAD, 1985-91**




Source: Ministry of Science & Education

## D. EDUCATION EXPENDITURES IN 1992 AND THE 1993 BUDGET

2.38 In 1992, there was no capital investment in education. Salary expenditures fell from 46.5 percent in 1991 to 30 percent, and social security tax, from 6.5 to 4.7 percent. This is despite the pay raise, and is due to retrenchment and attrition of 10 percent of the employees and the increase in percentage share of overhead cost. The most noticeable change was the sharp increase in heating cost, amounting to 21 percent of the total education expenditures. The percentage share of food also increased to 15 percent due to the rise in food prices. Student allowance was still a sizable 7.3 percent because it was not possible to completely withdraw stipends to those studying abroad (Table 2.5a).

2.39 Although aimags and cities were encouraged to generate their own revenue through paid services and institution's work and services, such revenue accounted for only 4.5 percent of the total expenditures in 1992.16/ The remaining 95.5 percent was covered by public allocation (Table 2.5a).

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16/ The percentage share of own revenue in the 1992 expenditures was higher than that in Table 2.4 because it includes other sources of revenues as well.

**Table 2.5a: EDUCATION REVENUES AND EXPENDITURES, 1992 AND 1993**
(Million Tugrik, Current Prices)

| | 1992 Expen-ditures | % of 1992 Expen-ditures | 1993 Budget | % of 1993 Budget |
|---|---|---|---|---|
| Work and Services Revenue | 47.1 | | 31.9 | |
| Paid Services | 71.4 | | 309.0 | |
| Other Revenue | 29.2 | | 23.6 | |
| Own Revenue | 147.7 | | 364.5 | |
| Personnel expenses | 1,129.1 | 34.9 | 2,838.7 | 32.5 |
| Salaries | 976.7 | 30.2 | 2,501.1 | 28.6 |
| Social Security | 152.4 | 4.7 | 337.6 | 3.9 |
| Admin. & Overhead | 1,012.3 | 31.3 | 3,062.3 | 35.0 |
| Administrative | 146.0 | 4.5 | 412.3 | 4.7 |
| Energy | 138.3 | 4.3 | 377.1 | 4.3 |
| Heat | 670.6 | 20.7 | 2,169.5 | 24.8 |
| Petroleum | 45.9 | 1.4 | 103.3 | 1.2 |
| Travel Expenses | 11.6 | 0.4 | 34.8 | 0.4 |
| Food | 485.4 | 15.0 | 1,841.9 | 21.1 |
| Students' Allowance (voc. tech. & higher educ.) | 237.2 | 7.3 | 587.2 | 6.7 |
| Medicine Packages | 2.0 | 0.1 | 4.5 | 0.1 |
| Other Expenses | 355.7 | 10.3 | 370.6 | 4.2 |
| Expenditures | 3,233.3 | 100.0 | 8,740.0 | 100.0 |
| Net Public Education Expenditures | 3,084.2 | | 8,375.5 | |

*Source*: Ministry of Finance.

2.40 As many of the austerity measures were implemented in the second half of 1992, the 1993 budget is a better reflection of the government's anticipation of their resource constraints. In 1993, salaries and social security tax are expected to continue to shrink, to 29 and 4 percent, respectively. Administrative and overhead cost will rise to 35 percent, of which heating alone accounts for 25 percent. Food subsidies will rise to 21 percent, while student allowance is expected to decline moderately to 6.7 percent. Own revenue is a modest 4.1 percent of the expenditures, and the state subsidies are to make up for 96 percent in 1993 (Table 2.5a). For a comparison of the recurrent education expenditures between 1991 and 1993 at constant 1990 prices, see Table 2.5b.

2.41 This pattern of resource allocation has implications for equity, efficiency, quality and labor market linkages (Annexes 5.1 to 5.12).

**Table 2.5b: RECURRENT PUBLIC EXPENDITURES ON EDUCATION AT CONSTANT 1990 PRICES, 1991-93**
(Million Tugrik)

| | 1991 Expenditures | 1992 Expenditures | 1993 Budget | 1991-92 | 1992-93 | 1991-93 |
|---|---|---|---|---|---|---|
| | --- (Million Tugrik) --- | | | -- (Percentage Change) -- | | |
| Personnel Expenses | 463.6 | 190.3 | 111.1 | -58.9 | -41.7 | -76.0 |
| Salaries | 406.5 | 164.6 | 97.9 | -59.5 | -40.6 | -75.9 |
| Social Security | 57.0 | 25.7 | 13.2 | -55.0 | -48.6 | -76.8 |
| Admin. & Overhead | 159.6 | 170.7 | 119.8 | 6.9 | -29.8 | -24.9 |
| Administrative | - | 24.6 | 16.1 | - | -34.5 | - |
| Electricity | - | 23.3 | 14.8 | - | -36.7 | - |
| Heating | - | 113.0 | 84.9 | - | -24.9 | - |
| Petroleum | - | 7.7 | 4.0 | - | -47.8 | - |
| Travel | 3.1 | 2.0 | 1.4 | -37.7 | -30.4 | -56.6 |
| Food | 99.3 | 81.8 | 72.1 | -17.6 | -11.9 | -27.4 |
| Student Allowance | 79.3 | 40.0 | 23.0 | -49.6 | -42.5 | -71.0 |
| Medicine Packages | 0.2 | 0.3 | 0.2 | 69.1 | -47.8 | -11.7 |
| Others | 69.8 | 60.0 | 14.5 | -14.1 | -75.8 | -79.2 |
| Recurrent Expenditures | 874.9 | 545.1 | 341.9 | -37.7 | -37.3 | -60.9 |
| Revenue | = | 24.9 | 14.3 | | | |
| Net Recurrent Expenditures | 874.9 | 520.2 | 327.6 | -40.5 | -37.0 | -62.5 |

*Source*: Mission estimates.

2.42 **Equity.** Inequity in resource distribution is usually reflected in the percentage shares allocated to various levels of education, the per student cost, and how the resources are used. In 1993, kindergarten accounts for 15.5 percent of total enrollment in public institutions, primary and secondary education for 72.8 percent, vocational education for 2.2 percent, post-secondary technical schools for 1.5 percent, and higher education for 2.7 percent. However, 24.4 percent of the resources are allocated to kindergarten, 53.0 percent to primary and secondary education, 4.7 percent to vocational education, 5.6 percent to post-secondary technical schools, and 6.1 percent to higher education (Table 2.6). While the allocation of resources at various levels does not need to be proportional to the enrollment, kindergarten's 17/ large share is high by international comparison. On the other hand, the allocation to higher education is low, considering the higher salaries of faculty members and the greater needs and higher expenses for books and periodicals, computers, and laboratories.

17/ Only 30 percent of the relevant age group enroll in kindergarten. Of those enrolled, 44 percent are in the cities and 56 percent in the aimags.

## Table 2.6: Enrollment, Expenditures, and Cost Per Student, 1991-93

| | Enrollment | % of Total | Expenditures (million Tugrik) | % of Total | Unit cost (Tugrik) | Unit cost index Pri.+Sec.=1 |
|---|---|---|---|---|---|---|
| **Current Prices** | | | | | | |
| 1991 | | | | | | |
| Kindergarten | 90,072 | 16.4 | 333.0 | 19.1 | 3,697 | 1.8 |
| Primary and Secondary | 411,700 | 75.1 | 838.8 | 48.2 | 2,037 | 1.0 |
| Vocational | 17,961 | 3.2 | 78.4 | 4.5 | 4,364 | 2.1 |
| Post-secondary Technical | 14,986 | 2.7 | 133.5 | 7.7 | 8,910 | 4.4 |
| Higher Education | 13,223 | 2.4 | 212.9 | 12.2 | 16,102 | 7.9 |
| Others | - | - | 142.5 | 8.2 | - | - |
| Total | 547,942 | 100.0 | 1,739.2 | 100.0 | | |
| 1992 (Preliminary) | | | | | | |
| Kindergarten | 88,811 | 16.8 | 664.4 | 21.5 | 7,480 | 1.9 |
| Primary and Secondary | 401,256 | 76.0 | 1,594.2 | 51.7 | 3,973 | 1.0 |
| Vocational | 12,534 | 2.4 | 183.4 | 5.9 | 14,630 | 3.7 |
| Post-secondary Technical | 12,789 | 2.4 | 185.7 | 6.0 | 14,521 | 3.7 |
| Higher Education | 12,303 | 2.3 | 229.8 | 7.5 | 18,678 | 4.7 |
| Others | - | - | 226.7 | 7.4 | - | - |
| Children's Organizations | - | - | 21.7 | 0.7 | - | - |
| Children's Camps | - | - | 60.1 | 2.0 | - | - |
| Foreign Expenditures | - | - | 65.0 | 2.1 | - | - |
| Miscellaneous | - | - | 79.9 | 2.6 | - | - |
| Total | 527,693 | 100.0 | 3,084.2 | 100.0 | | |
| 1993 (Budget) | | | | | | |
| Kindergarten | 81,817 | 15.5 | 2,046.5 | 24.4 | 25,013 | 2.2 |
| Primary and Secondary | 384,069 | 72.8 | 4,436.6 | 53.0 | 11,551 | 1.0 |
| Vocational | 11,537 | 2.2 | 390.6 | 4.7 | 43,012 | 3.7 |
| Post-secondary Technical | 7,749 | 1.5 | 471.0 | 5.6 | 80,534 | 6.9 |
| Higher Education | 14,052 | 2.7 | 511.0 | 6.1 | 36,365 | 3.1 |
| Others | - | - | 521.5 | 6.2 | - | - |
| Children's Organizations | - | - | 56.6 | 0.7 | - | - |
| Children's Camps | - | - | 154.9 | 1.9 | - | - |
| Foreign Expenditures | - | - | 115.0 | 1.4 | - | - |
| Miscellaneous | - | - | 195.0 | 2.3 | - | - |
| Total | 499,224 | 100.0 | 8,376.7 | 100.0 | | |
| **Constant 1990 Prices** | | | | | | |
| 1991 (Recurrent Expenditures only) | | | | | | |
| Kindergarten | - | - | 166.0 | 19.1 | 1,843 | 1.8 |
| Primary and Secondary | - | - | 418.1 | 48.2 | 1,015 | 1.0 |
| Vocational | - | - | 39.1 | 4.5 | 2,175 | 2.1 |
| Post-secondary Technical | - | - | 66.6 | 7.7 | 4,442 | 4.4 |
| Higher Education | - | - | 106.1 | 12.2 | 8,027 | 7.9 |
| Others | - | - | 71.0 | 8.2 | - | - |
| Total | - | - | 867.0 | 100.0 | | |
| 1992 (Preliminary) | | | | | | |
| Kindergarten | - | - | 112.0 | 21.5 | 1,261 | 1.9 |
| Primary and Secondary | - | - | 268.7 | 51.7 | 700 | 1.0 |
| Vocational | - | - | 30.9 | 5.9 | 2,466 | 3.7 |
| Post-secondary Technical | - | - | 31.3 | 6.0 | 2,448 | 3.7 |
| Higher Education | - | - | 38.7 | 7.5 | 3,149 | 4.7 |
| Others | - | - | 38.2 | 7.4 | - | - |
| Total | - | - | 519.9 | 100.0 | | |
| 1993 (Budget) | | | | | | |
| Kindergarten | - | - | 80.1 | 24.4 | 979 | 2.2 |
| Primary and Secondary | - | - | 173.6 | 53.0 | 452 | 1.0 |
| Vocational | - | - | 19.4 | 4.7 | 1,683 | 3.7 |
| Post-secondary Technical | - | - | 24.4 | 5.6 | 3,151 | 6.9 |
| Higher Education | - | - | 20.0 | 6.1 | 1,423 | 3.1 |
| Others | - | - | 20.4 | 6.2 | - | - |
| Total | - | - | 327.7 | 100.0 | | |

*Source*: Ministry of Finance and mission estimates.

*Note*: The enrollment in 1993 is based on actual figures, not the Government's projections, which are higher. Therefore, the Government's estimated unit cost is lower than the actual unit cost. The actual enrollment in post-secondary technical schools is less than half of MOF's projection. Subsequently, the unit cost is more than twice as high as was originally estimated.

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2.41 The per-student cost of primary and secondary education remained the lowest from 1991 to 1993. The per-child cost in kindergarten relative to that of primary and secondary education is not only high but has been on the rise over the same period. A large proportion of the resources in kindergarten is spent on food. The per student cost of secondary vocational and post-secondary technical education also has been on the rise, because enrollment is declining. However, the unit cost of higher education has declined due to growing enrollment (Table 2.6).

2.42 The mission of primary and secondary education is to serve all children of relevant age. Primary and secondary schools are spread out all over the country, and, therefore, have to spend a much higher proportion of the budget on administration (various supplies) and overhead (heating, electricity, transportation). However, kindergarten, post-secondary technical, and higher education institutions are located in cities and aimag centers, and have lower overhead. Administrative and overhead cost accounted for 41 percent of primary and secondary education expenditures, compared with 27 percent of kindergarten expenditures, 32 percent of technical education expenditures, and 21 percent of higher education expenditures (Annex 5.2). The reason is that heating in the big cities is by coal-fired generators, but heating in the aimags is by small diesel engines. Heat generation in the cities is able to attain the economies of scale, but that in the aimags cannot. Moreover, coal is produced in Mongolia, but diesel oil is imported and, therefore, more expensive. When primary and secondary education spends so much on overhead, little is left to invest in educationally effective inputs, such as textbooks and in-service teacher training.

2.43 Moreover, within primary and secondary education, the administrative and overhead cost varies from among aimags and cities. In 1992, the administrative and overhead cost accounted for 31 percent of Ulaanbaatar's expenditure, but for 43 percent of Arhangay's, and 37 percent of Bayanhongor's and Ovorhangay's, respectively (Annex 5.4). The 1993 budget estimates the heating cost in Ulaanbaatar to be only 11 percent, but 43 percent in Ovorhangay (Annex 5.5). Given these different energy costs, what might seem to be a fairly even distribution of resource might have differential impact on education. It is not surprising that the schools closed during the winter were located in aimags where energy cost was particularly high. Children whose schools were closed for one to four months in winter were deprived of nearly half a school-year's instruction.

2.44 A way to cut the overall heating bill is to change the school calendar by having classes during warmer months and having holidays during the coldest months. The limitation to this approach is that children's labor is needed in agricultural and nomadic households during the summer and autumn. So in rural communities where the heating cost is highest, changing the school calendar is not possible. However, in major cities where children's labor is not needed, there is a potential in saving by having classes in the summer. Although heating in cities is much less expensive, there will be a need to save if the government scales back its subsidies on energy.

2.45 MOSE is considering using distance education to address the problem of high dropout rates among herders' children. Distance education is to be delivered by a

number of ways. For example, several households can organize instructional activities together; mobile teachers can be employed to visit herding households; and the radio can be used to broadcast lessons. Given the dispersal of population, the need for child labor at home, the lack of warm clothing and boots for school, and the inability of poor households to pay, distance education should be explored as an alternative. However, the resource needs should not be underestimated. To minimize the disparity in standards between distance education and regular schooling, investments should be made in the development of relevant curricula and learning materials, training of parents and mobile teachers, provision of free textbooks and writing materials, and the development of an assessment system to monitor learning outcomes. A strong science-based curriculum is likely to serve the interest of parents and children, and to improve family health, animal husbandry, and environmental management. Since parents were not schooled in the Classical Script, text should probably be provided in the Cyrillic Script so that they can teach their children. If resources permit, distance learners should be brought to the school for one or two months during warmer seasons in order to facilitate eventual mainstreaming.

2.46 Another equity issue concerns the stipends for vocational, technical, college, and university students, as well as those trained in foreign countries. Given that a higher level of education will enable the student population to adjust better during the economic transition, it is justifiable to ask them to finance their own education through paying tuition fees. It is necessary to simultaneously introduce a student loan scheme to assist students to pay for tuition fees. Means-tested grants should also be made available to students from particularly poor families, and a few merit-based scholarships should also be established to award exceptional students.

2.47 **Efficiency**. The education sector still employs about 33 percent of total government staff, and many of them are not directly involved in teaching. In primary and secondary education, teachers as a percentage of total staff in primary and secondary education increased from 53 percent in 1991-92 to 57 percent in 1992-93, while noninstructional staff (such as doormen, cleaners, cooks, and couriers) accounted for about 29 percent of the total staff. Many of these noninstructional staff in primary and secondary schools perform useful functions such as looking after the schools' livestock, and riding long distances on horseback to transmit messages (Table 2.7 and Annex 3.5).

2.48 In vocational, technical, and higher education, teachers accounted for only 39 percent of total staff, but doormen, cleaners, cooks, messengers, and others accounted for 39 percent (Table 2.7). These noninstructional staff do not appear to perform as important functions as their counterparts in the rural areas. In certain institutions, for example, the Agricultural University, noninstructional staff made up 75 percent of the total staff, although it does not have an experimental farm (Annex 3.4). Although in higher education, academic staff's salaries accounted for two thirds of the salaries and noninstructional staff salaries for one third, it should be the long-term goal of MOSE to reduce the percentage of noninstructional staff in vocational, technical, and higher education so that resources can be invested in libraries.

**Table 2.7: TEACHERS AS A PERCENTAGE OF TOTAL STAFF**

| | Total Staff | Number of Teachers | Teachers as % of Total Staff |
|---|---|---|---|
| 1991-92 | | | |
| Kindergarten | 15,793 | 8,686 | 55 |
| Primary and Secondary Education | 38,789 | 20,481 | 53 |
| Vocational and Technical Education | 2,740 | 1,260 | 46 |
| Higher Education | 2,952 | 1,341 | 45 |
| 1992-93 | | | |
| Kindergarten (teachers and assistant teachers) | 14,408 | 7,920 | 55 |
| Primary and Secondary Education | 34,199 | 19,441 | 57 |
| Vocational, Technical, and Higher Education | 8,083 | 3,120 | 39 |

*Source*: Ministry of Science and Education.

2.51 Another indication that the capacity of the education sector has not been fully utilized is the still low student-to-teacher ratios. Due to decline in enrollment, the student-to-teacher ratio in primary and secondary schools fell from 20:1 in 1991-92 to 19:1 in 1992-93. Preventing dropout and targeting the poor for assistance to bring them back to school will make fuller use of the existing capacity.

2.52 Improvement has been made in the higher education sector. The ratio rose from 10:1 in 1991-92 to 11:1 in 1992-93 due to increase in enrollment. However, there is much variation among institutions. The Mongolian National University has a ratio of 9:1, which is still below the average of 10-15:1 in many countries, and much lower than the ratio of 25:1 in private higher institutions in Mongolia. While the student-to-teacher ratio varies across fields, (for example, over 20:1 in social sciences and 12-15:1 in science), in fields where there is excess capacity, there is an opportunity to expand enrollment. Enrollment expansion will both reduce unit cost and provide learning opportunities to more young people (Table 2.8).

2.53 Raising the student-to-teacher ratio, increasing class size and applying a hiring freeze of teachers have implications for teacher education and employment prospects of graduates. At present, primary school teachers received preservice training in vocational schools, and secondary school teachers in Pedagogical University. If a hiring freeze of teachers in the public sector is maintained for a few years, graduates from these programs are likely to experience reduced employment prospects, except those trained in new subjects that are in high demand, for example, English.

**Table 2.8: STUDENT-TO-TEACHER RATIOS**

| | No. of Students | No. of Teachers | Student-to-Teacher Ratio |
|---|---|---|---|
| 1991-92 | | | |
| Kindergarten | 90,072 | 8,686 | 10:1 |
| Primary and Secondary | 411,696 | 20,481 | 20:1 |
| Vocational | 18,961 | 1,132 | 16:1 |
| Post-secondary Technical | 14,629 | 1,282 | 11:1 |
| Higher | 13,872 | 1,341 | 10:1 |
| 1992-93 | | | |
| Kindergarten | 85,691 | 7,920 | 11:1 |
| Primary and Secondary | 369,092 | 19,441 | 19:1 |
| Vocational, Technical and Higher Education | 34,919 | 3,120 | 11:1 |
| Breakdown by Institution, 1992-93 | | | |
| Technical Schools in Central Aimag | 8,090 | 746 | 11:1 |
| Mixed Voc. & Technical Schools | 2,982 | 213 | 14:1 |
| Technical Schools | 2,256 | 147 | 15:1 |
| Specialized Schools | 7,749 | 618 | 13:1 |
| Assorted Schools in UB & Erdenet | 433 | 14 | 31:1 |
| Mongolian National University | 2,589 | 289 | 9:1 |
| Technical University | 4,038 | 398 | 10:1 |
| Pedagogical University | 1,589 | 153 | 10:1 |
| Agriculture University | 1,012 | 95 | 10:1 |
| Medical University | 2,669 | 244 | 11:1 |
| Mongolian State University (Hovd) | 413 | 38 | 11:1 |
| Cultural Institute | 358 | 93 | 4:1 |
| Language Institute | 741 | 72 | 11:1 |
| Private Tertiary Institutions | 1,797 | 72 | 25:1 |

*Source*: Ministry of Science and Education.

2.54 This raises the questions of the utility and relevance of teacher education, and how much savings can be made if teacher training is organized differently. Would the quality of teacher education be enhanced if Pedagogical University, with 1,600 students and 153 faculty members, was merged with Mongolian National University (MNU), with 2,600 students and 289 faculty members, so that students can attend MNU courses, share libraries and laboratories, and interact with MNU students? Would it provide greater choice of employment to graduates if the emphasis is placed on general education so that when the demand for teachers is weak, graduates can work in fields outside education, but should there be a shortage of teachers, they can be trained quickly in short-cycled preservice pedagogical courses and in continuous inservice courses? These questions need

to be addressed. Considerable savings can be attained if scarce resources are not used on fields with weak demand, particularly when other cost-effective strategies can be explored.

2.55 **Quality.** Investments in education must be directed to improving quality of education and learning outcomes. Education research has found that textbooks are one of the most cost-effective inputs in education. Quality of education at all levels is likely to be undermined when resources have not been adequately allocated to these inputs. Without books, little learning can occur even if all relevant school-age children are enrolled. Moreover, without books and journals, students in higher education cannot keep up to date on their knowledge.

2.56 Mongolia has the technical capacity to produce four-colored textbooks, with attractive pictures and layout. However, the problem is due to the lack of foreign exchange to import paper for printing and the negligible allocation to book and library provision. The cost of production, printing, and transportation of essential textbooks to aimags is estimated to be over four times the amount allocated, even without including the cost of paper (Annex 5.12).

2.57 In 1992, the total allocation to books and libraries accounted for only 0.3 percent, which is very low by international comparison.18/ In 1993, books, newspaper, and other reading materials in libraries accounted for 0.02 percent of kindergarten budget, 0.15 percent of primary and secondary budget, 0.02 percent of vocational budget, 0.07 percent of post-secondary technical budget, and 0.29 percent of higher education budget (Annex 5.10). With such limited allocation to books for libraries, little can be done to improve the quality of education.

2.58 Textbooks and writing materials have never been provided free of charge; students at all levels have to buy them. However, textbooks are becoming more and more expensive, costing Tug 30 to 60 per book. An annual average of six books are needed in the lower primary level, amounting to Tug 180-360 per year. For a family with two to four children in school, this may cost 6 percent of the annual salary of an average worker. A solution is to place many sets of required books in school libraries and set up a book lending scheme to ensure that children have access to books. Development of teacher's guides is also necessary to enable teachers to make full use of the textbooks for instruction.

2.59 If primary and secondary education suffers from the lack of provision of books, higher education is even more severely affected because its needs for laboratories, facilities, materials, computers, and spare parts, in addition to books and journals are greater. The percentage share of higher education has declined from 12 percent in 1991-92 to 6 percent in 1992-93. Although scientific research and development is supported by a separate science budget outside of the education budget, higher education is still in need of a stronger finance base.

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18/ In Sub-Saharan Africa, for example, the weighted average percentage of recurrent public expenditure on teaching and learning materials was 2.0 in primary schools, and 2.9 in secondary schools in 1983. See World Bank, Education in Sub-Saharan Africa, 1988, p. 141-142.

2.60 The charging of tuition fees is not likely to strengthen the resource base immediately because a large sum has to be set aside to provide student loans. Thus, resources for student loans and for buying books and journals for libraries must come from savings by improving efficiency such as increasing the student-to-staff ratio and the rates of utilization of existing facilities.

2.61 Another issue related to quality is the length of the secondary cycle. It is appropriate that, given the severe resource constraint, priority should be given to quality basic education. However, if Mongolia wants its education system to be comparable with most of the industrialized countries in the world, it will eventually have to reform senior secondary education. Given the enormous resource implications for curriculum change, teacher training, textbook development, and examination reform, this issue should be tackled after Mongolia has attained economic stability.

2.62 **Labor Market Linkages.** In the transition to a market economy, many public enterprises may have to be closed down, and private enterprises take time to develop. In the foreseeable future, graduates from universities and institutions of technical and vocational education are likely to have difficulty finding employment; primary and secondary graduates are likely to have even fewer prospects. The industrial sector is not likely to be able to absorb graduates, but agriculture, agro-based industries, and trading are likely to have high potential for growth. The budget must be used to support educational content that will build up the knowledge base and skills to enable graduates to engage in productive activities, be that livestock herding or small business. Given the budget constraint, education must be so designed to prepare children who are not likely to complete Grades 1-8, to enable them to acquire literacy, numeracy and problem-solving skills as a basis for continuing education in the future.

2.63 Since 66 percent of primary and secondary school children are in the aimags, and since agriculture is still a predominant economy, it is very important that basic education have a strong science content that includes health, biology, veterinarian knowledge, earth science, and environmental science.

2.64 At present, the traditional cultural content dominates the primary curriculum. The use of the classical script also makes it difficult to teach science. Science is taught for only one hour out of 24 hours per week in Grade 1 and two hours after that (Annex 4.1). This is far below the level that children between the ages of 7 and 11 can benefit from. Although more time is allocated to science in Grade 5 to coincide with the introduction of the Cyrillic script, many children from poor rural families have dropped out of school by then.

2.65 It is advisable to increase budgetary allocation to the development of relevant science curricula in primary schools, inject applied, science-based knowledge in language and mathematics subjects, develop textbooks and teaching guides to disseminate such knowledge, and increase time allocation to science subject in Grades 1-5. These measures are likely to improve the relevance of schooling to production, enable parents to appreciate the usefulness of education, and also engage the interest of children.

2.66 In secondary vocational and post-secondary technical education, enrollment is likely to continue to dwindle and the unit cost to rise. The development of vocational and technical education were part of the industrialization process in Mongolia. These schools were established to meet enterprises' demands for specific skilled labor and technicians, and graduates were placed automatically to ensure that they are employed. During the economic transition, many privatized and public enterprises must cut costs and retrench staff, therefore are not likely to have much demand for vocational and technical school graduates. A supply-driven vocational and technical education program will be a serious mistake. Training cannot create jobs. Resources allocated to vocational and technical education are not likely to have high returns if they continue to produce graduates with skills that are unwanted or obsolete in the economy.

2.67 Moreover, studies in a number of countries show that academic/general education yields higher social and private rate of return than vocational/technical education. Strong cognitive skills developed in Grades 1-9 will improve the on-the-job trainability of students, whereas narrow vocational training does not. It is more desirable to strengthen general education than vocational education, with a strong, science-based knowledge, if the goal is to improve labor market outcomes.

2.68 Given the declining enrollment, it is important to review what kind of vocational and technical education is still in demand and continue to draw applicants. Investment can be made in collaboration with enterprises in improving the programs in high demand. However, for those programs which have few applicants, it is better to phase them out and save on administrative and overhead costs. Apprenticeship schemes organized by industry will also be an effective way of training skilled workers.

2.69 Vocational and technical schools are relatively well endowed with buildings and equipment. Where there is low enrollment and excess capacity, these schools can be turned into self-financing community colleges. Short courses on income-generating, small business activities (including information on how to apply for credit, to calculate economic returns, and to keep account) might be more useful and economical than full-length programs that run for two to three years.

2.70 Similarly, in higher education, it is important to let decisions on enrollment in various specialties be guided by market signals. For example, there are few applicants to enter the field of geology because of the perceived lack of employment opportunity, and the department is required to accept all applicants. However, students are willing to pay over Tug 20,000 per year to study in private institutions that offer courses such as languages and business management that will lead to higher-paying jobs in the emerging private sector. One language institute had to turn away two out of every three applicants due to the lack of classrooms. This indicates that a demand-driven educational program will serve the needs of both individual students and the society. Public institutions should expand their programs where the demand is high.

2.71 In the medium term, however, the labor market may be saturated with graduates trained in foreign languages and business management, and other manpower is

needed. Mongolia's two major stable foreign exchange earners are copper and cashmere, both of which will benefit from improved technology. A *critical mass of scientists and engineers* is needed to modernize the agricultural, mining, and industrial sectors, and infrastructure. At the minimum, Mongolia should aim at strengthening the indigenous technological capability so that scientists and engineers can assess, select, use, adapt, and improve foreign technology, and develop appropriate technology to adjust to changing circumstances. Since it takes a much longer time to train scientists and engineers than social scientists or translators and managers, universities should continue to train undergraduates in the fields of natural science and engineering in order to maintain the stock, and seek foreign support for retraining of faculty members. A relatively low-cost solution is to negotiate with open learning institutions, such as Britain's Open University, which runs degree courses on a range of science and social science subjects, to use their course materials for undergraduate and graduate education. Students can learn by correspondence under the supervision of their Mongolian professors and can earn both Mongolian and British degrees.

# 3. STRATEGIES TO BUILD A STABLE RESOURCE BASE TO FINANCE EDUCATION

3.1 During Mongolia's transition to a market economy, it is important that the past achievement be preserved and investment in human capital be continued so as to prepare for future development. Given the budget constraint, three complementary strategies can be pursued simultaneously in order to provide a more stable resource base to finance education: (a) rationalize the public expenditure on education in order to save cost and improve efficiency; (b) reallocate the existing budget to priority areas to safeguard equity and improve quality; and (c) mobilize private and foreign resources to support kindergarten, post-secondary and higher education, and distance education (Table 3.1).

## A. Rationalization of Public Expenditures on Education

3.2 Rationalization of the education expenditure must be the first step in education financing. The expenditures of 1992 and the budget of 1993 showed a high proportion of resources going into stipends. In spite of the policy of cost recovery, tertiary-level students with good results in the first two quarters were exempted from a high proportion of the tuition fees. While this policy rewards academic merits, this must be done with selectivity in order to avoid undermining the principle of cost recovery. Moreover, it is not advisable to continue to pay third-year students studying abroad to return for home visit in the summer.

3.3 Given that food accounts for a large share of the 1993 kindergarten budget, the government should set a target for the gradual reduction of food subsidies in kindergarten in the next three to five years (Annex 5.3). Other expenses not directly related to education are children's camp (1.9 percent) and children's organization (0.7 percent). Beneficiaries of these expenditures are urban children from better-off families, and the government should not subsidize them. As regards food subsidies in boarding schools, since the charging for meat has immediate adverse impact on enrollment in boarding schools, it is not advisable to charge for other nonmeat food items next year.

3.4 Those vocational and technical programs/schools that have sharply decreased enrollment should be phased out or closed down. The buildings can be converted to self-financing community colleges or education centers. To fully utilize the existing capacity at all levels of education, the government should continue to increase student-to-teacher ratios and refrain from hiring new teachers unless there is a real shortage of teachers in a particular subject in a particular school.

3.5 Higher education also needs to be reorganized in the medium term. Most of the higher education institutions are too small in size to be able to attain the economies

## Table 3.1: Strategies to Adjust the Use of Resources to Finance Education

| | Rationalization of Public Expenditures | Reallocation of Public Expenditures | Mobilization of Private & Foreign Resources |
|---|---|---|---|
| Efficiency | · Reduce noninstructional staff by hiring freeze & gradual attrition.<br>· Increase student/teacher ratio by introducing multigrade teaching in rural schools, preventing dropouts in basic education & increasing intake in higher education.<br>· Phase out stipends in higher education & food subsidies in kindergarten.<br>· Insulate schools to save energy cost.<br>· Restructure & consolidate higher education institutes. | | · Charge tuition fees at post-secondary levels & for food in kindergarten.<br>· Charge realistic interest rates for student loans.<br>· Distinguish between merit scholarship & needs-based grants. Be very selective in awarding merit scholarship to avoid undermining the principle of cost recovery. |
| Equity | | · Reallocate resources to basic education from vocational, technical schools, children's camps, & organizations.<br>· Target the poor for food, clothing, & learning materials subsidies.<br>· Make loans available to all students.<br>· Provide needs-based, means-tested grants to very poor students. | · Use foreign aid to finance the development of distance education, and to import paper for textbooks. |
| Quality | | · Set aside budget for primary-level science curriculum development, & production of textbooks & teachers' guides. | · Use foreign technical assistance to improve planning, management, assessment, & accreditation capacity.<br>· Use foreign aid to finance the improvement of higher education. |
| Labor Market Linkage | · Turn vocational & technical schools with low enrollment into self-financing community colleges.<br>· Set up apprenticeship scheme in enterprises to cut cost of vocational & technical education. | · Strengthen school science.<br>· Encourage courses on self-employment, income-generating activities.<br>· Let market signals drive vocational, technical, & higher education.<br>· Use short courses & on-the-job training to develop skills. | · Encourage private vocational, technical, & higher education by creating conducive legal environment. |

Source: World Bank missions to Mongolia in 1992 and 1993.







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of scale. While consolidation of institutions may be too daunting a task to take on at this stage, the adoption of a credit unit system and arrangements that allow students to take courses and use libraries and laboratory facilities outside their institutions, and the establishment of the accreditation system are necessary in order to ensure fuller utilization of resources, and to assure quality of educational programs.

3.6 Equally important is to make more efficient use of available resources by expanding enrollment. This is needed to compensate for the drop in students studying in former CMEA countries. The student-to-teacher ratio of private institutions may serve as a useful benchmark for what public institutions can achieve, particularly in the fields of social science, language, and business management.

3.7 The low teacher-to-noninstructional staff ratio is another indicator of inefficient resource use. It is advisable to aim for 66 percent of the total staff to be teachers in primary and secondary schools. A freeze on hiring of noninstructional staff is recommended. However, since housing and medical benefits are tied to employment, consideration should be given to the impact of retrenchment on these employees and their families. If possible, those retrenched should be allowed to continue to have housing and medical benefits.

3.8 Incentives should be set up to find ways of reducing the cost of heating. Mongolia's climate is very cold, and heating is necessary even in spring and autumn. Closing schools in winter is a poor solution because it shortens the school year, thereby severely undermining the quality of education. Mongolia's total instruction hours in a school year was 693, much shorter than 986 hours in South Korea or 840 hours in China. Closing schools in winter will further undermine quality.1/ It seems worthwhile to consider having schools open in the summer to save on heating costs, as long as they do not interfere with children's participation in parents' economic activities.

3.9 Conducting classes in the *ger* has been suggested as an alternative to cut the cost of heating. However, this may not be a viable alternative because the *ger* is not only small but also dark, particularly in the rural areas that have no electricity. Also, new investments in felt tents and wooden platforms are required. These new resources are not available under current financial constraints.

3.10 It is also important to investigate how to insulate school buildings and to heat classrooms economically. Insulation may provide huge savings.2/ Insulation does not involve costly materials, but can be achieved basically by ensuring that there are air-filled spaces in all outer surfaces of the building, particularly the roof through which warm air dissipates. Moreover, since imported diesel oil is costly, thoughts should be given to design stoves that use local fuel (dung or locally produced coal) to heat up classrooms.

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1/ UNESCO - World Education Report 1993. P. 134.

2/ Personal communication with Erik Thulstrup, Senior Science and Technology Specialist. Insulation materials such as glass wool is not expensive. Glass wool does not require imported inputs, but can be manufactured by the glass factory. For example, 20 centimeters of glass wool under the roof can assure a stable air mass for roof insulation.

Adaption of the traditional stove used in the *ger*, combined with special chimney or movable pipe to release smoke, should be attempted. Instead of heating an entire building, stoves can be used for individual classrooms.

3.11 Mongolian science and engineering professors, researchers, and students can be mobilized to solve these problems. The science budget, which is outside of the education budget, should set aside resources to support research and development in this area. This will support higher education and solve a serious national problem. If appropriate technology can be used to substitute for imported fuel, as well as to produce insulation materials, this will stimulate local industry to manufacture them. The mass application of insulation and heating technology will benefit not only schools, but also homes, hospitals, factories, and other buildings.

## B. Reallocation of Public Resources

3.12 Before any decision on the reallocation of resources can be made, it is necessary to disaggregate the primary education expenditures from those of secondary education. This will enable a closer examination of the level of spending on basic education and other cycles of schooling to assess the impact on equity, quality, and efficiency. This will also facilitate comparison with other countries to provide benchmarks for Mongolia to evaluate the adequacy of its educational spending by level of education.

3.13 In designing the overall strategy for financing education, a distinction must be made regarding where private providers can play a role, and where there is market failure which necessitates government intervention. Given that kindergartens, vocational and technical schools, and higher education institutions are mainly located in the cities, these levels of education can tap the resources of the private sector. The rapid expansion of private kindergarten and professional schools shows that the urban middle class is willing to pay for the services. Since the private sector can take part of the burden of financing and provision of education from the public sector, certain portion of their budget can be reallocated to basic education (Table 3.2).

**Table 3.2: Estimates of Resources that Can Be Made Available for Reallocation by Rationalizing Expenditures**
(Percentage of Total Public Expenditures on Education)

| Savings | % | Use for Other Purposes | % |
|---|---|---|---|
| Reduce noninstructional staff | 2 | Target the poor for subsidy | 7 |
| Phase out stipends in higher education | 3 | Primary Science | 1 |
| Reduce food subsidies in kindergarten | 5 | Textbooks & Libraries | 3 |
| Phase out subsidies to children's organizations & camps | 1 | Provide student loans & scholarships | 6 |
| Turn vocational & technical schools into self-financing community colleges | 6 | | |
| Total | 17 | | 17 |

Source: World Bank missions to Mongolia in 1992 and 1993.

3.14 The reduction of noninstructional staff, student stipends in post-secondary and higher education, universal food subsidies in kindergarten, and support to children's camps and organizations, as well as turning vocational and technical schools into self-financing community colleges may free up to 17 percent of the resources for reallocation to assist the poor (to prevent dropout), to improve primary school science and libraries, as well as to provide student loans and scholarships.

3.15 Given the severe resource constraint, it is advisable to focus on providing *quality education to all at the primary level* rather than spreading resources thinly to cover junior secondary education which is not attainable to rural children in particular. To attract children from poor families to attend primary schools, measures need to be taken to lower the direct cost of schooling by providing subsidies for food, clothing, and writing materials for the first six years of schooling. Targeting designed to help the needy requires further study, but a few strategies can be suggested here. Households with a single parent tend to have greater financial difficulties.3/ Such families can be targeted for assistance. Alternatively, assistance can be targeted to help aimags with unusually high dropout rates or households with fewer than 50 animals and more than one child.

3.16 Part of the reallocated resources should be invested in cost-effective inputs such as textbooks and teachers' guides. While it is unaffordable to provide textbooks free of charge to all children, putting sets of textbooks in school libraries is a strategy to pursue (Table 3.2).

## C. Mobilization of Private and Foreign Resources

3.17 Mobilization of private and foreign resources is necessary to replace dwindling public resources and to finance the many reform initiatives. The three most common methods are to charge tuition fees, to encourage private schools, and to enlist foreign assistance.

3.18 **Cost Recovery**. Professional and higher education have begun charging tuition fees in 1992-93, and should continue with the practice. The increase in enrollment in spite of the high fees shows that students are willing to invest in their own education. The government has moved in the right direction to set up a student loan scheme to provide financial assistance to students of lesser means. However, the government should make a distinction between merit scholarship, which should be limited to the very excellent students, and needs-based grants, which should be means-tested and available to poor students. The current practice of exempting students with good results in the first two quarters from a proportion of tuition fees does not facilitate cost recovery. It is advisable that both scholarship and grants be made available on a limited basis. The remaining students will be expected to borrow to finance their education.

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3/ Caroline Harper, "Structural Adjustment and Vulnerable Groups in Mongolia: Strategies for Social Policy Planning."

3.19 One of the proposals in MOSE is to make all students eligible to borrow from a foundation up to Tug 2,000 per month at an interest rate of 3-5 percent. Loans are to be repaid within a number of years from the time of borrowing. Those who can pay back within three years after graduation will pay less than 3-5 percent interest. Those students who have excellent grades in the first two semesters of the first year are exempted from a large share of the principal. MOSE can be expected to recover about 35 percent of the total amount lent.

3.20 A student loan scheme involves a number of complicated issues, such as what realistic interest rate to charge, how to allocate loans to different fields, how to administer the loan, and how to ensure payback. Mongolia is hampered by the lack of an income tax collection mechanism by which the government can track those who default. A possible way of tracking graduates is through the social security tax system, by which employers can deduct the amount that is due from the graduates. However, this system will only track the salaried class, not the high-income groups of entrepreneurs and traders. The default rate might be high. Furthermore, if only 3-5 percent interest rate is charged when the annual inflation rate is estimated to be over 100 percent, there is no real cost recovery. When administrative cost is taken into account, it may be less costly to provide grants.

3.21 MOSE considers that it is important to establish the principle of cost-recovery and to make sure that it gains public acceptance. It is equally important to establish the institution of student loans in order to build up the experience and personnel so that the mechanism can be improved in the future.

3.22 **Partnership with the Private Sector**. As mentioned above, the private provider can be highly responsive to changing skill requirements in the labor market. Private institutions that came into existence in 1992 were founded by enterprising teachers and professors who left public institutions to set up their own schools. They rent classrooms from public secondary schools, and hire full-time as well as part-time teachers at above public sector salaries. In spite of the very high tuition fees, there is still excess demand for private education, which is perceived to be more in tune with the market. In this way, both the public and private sectors benefit from the sharing of buildings and from income generation.

3.23 MOSE is in the process of drafting a private education law. One of the proposed stipulations is to require a private provider to own a building in order to obtain permission to operate. It is advisable that MOSE does not set up barriers to entry by insisting on such a stipulation. MOSE also should refrain from putting a ceiling on private institution fees because it will only undermine the quality of education. If the fees are too high for students to pay, they will stop applying to these institutions. In this way, they will send a signal to the private providers not to charge too much. Letting the market regulate the amount of tuition fees in private institutions is the most efficient way of supporting private education.

3.24 MOSE, however, has a responsibility to assure that education provided by private institutions has met certain standards. It can do so by setting up a testing and certification system to ensure that graduates meet professional standards in their fields. The certificate conferred should send a signal to future employers about the skill level the student has attained. Moreover, this system should be expanded to serve both graduates from private and public institutions in vocational, technical, and higher education.

3.25 **Making Use of Foreign Assistance**. Multilateral and bilateral agencies can contribute to capital cost financing and technical assistance, thereby freeing public resources for recurrent and local cost financing. A number of projects have received funding from donors. The Danish International Development Agency (DANIDA) funded retraining of teachers at the Pedagogical University, import of papers, and improvement of textbooks. The United Nations Educational, Scientific and Cultural Organization (UNESCO) funded a Gobi desert women's education project. A private Japanese publishing company printed free of charge Grade 1 classical Mongolian language textbooks. UNESCO and the World Church Council partially funded a project to educate cattle breeders. The United States Information Agency has funded American academics to study higher education reform. The Asian Development Bank is funding a study on the education sector that is likely to lead to a project to improve planning, management, and finance of higher education (Annex 7.1).

3.26 In addition, MOSE has requested support in the following areas. In higher education, funding is needed for the training of Higher Education Reform Commission staff and university administrative staff in planning, accounting, and management. To improve natural science instruction and research and foreign language education in higher education, donors are invited to support twinning arrangements with universities in other countries, and to facilitate faculty training, curriculum development, and to upgrade scientific equipment and language laboratories. To improve the development and production of teaching materials and textbooks for all levels of education, donors are invited to conduct a university system-wide study of text and teaching materials, and to collaborate with universities on a feasibility study on the financing of a production center for the local production of teaching and other equipment and supplies such as workbooks, pencils, ink, chalk, and paints. In addition, the Inspectorate Board has inquired about the possibility of World Bank support to set up a national assessment system to monitor educational progress, to set up a system to test teachers and to evaluate the quality of schools in various levels of education, and to train staff (Annex 7.2).

3.27 In planning for foreign funding, it is advisable to think of physical constraints such as the cost of heating, electricity and petroleum. Equipment like televisions and video-discs cannot be effective media in schools unless a stable supply of electricity, spare parts, and software can be assured. It is also advisable to make sure that the existing capacity is fully utilized before purchasing new equipment. For example, the newly privatized Rainbow Press, formerly the government's printing press to produce textbooks for the country, has a very experienced professional staff and sophisticated East German presses that can produce four-colored books. However, the necessity for the government to pay a private press to print textbooks gives rise to an interest in acquiring

new printing presses for use only by the government. The duplication of equipment will not only waste public resources, but also undermine the development of the private sector. Also, in some instances, it is more economical to import finished products (such as pencils and ink) than to build factories to produce them because the inputs and fuel have to be imported.

3.28 Since Mongolia has a very ambitious educational reform program, it is necessary to *set priorities* in order to make the maximum use of available resources. Among the first priorities are: (a) to build MOSE's planning and management capacity in order to improve the overall efficiency of resource use; (b) to import essential education inputs such as paper for printing (after DANIDA's grant expires), books, journals, microfiche, and databases on CD-ROM for updating university libraries; (c) to direct a market-oriented approach to vocational and technical education and training; and (d) to finance scholarships to retrain professors and researchers.

3.29 Among the second priorities are: (a) to set up an assessment system to monitor learning achievement in primary and secondary education to improve educational quality; (b) to set up a testing and certification system to ensure that graduates of professional education from private and public institutions have attained professional standards; (c) to upgrade laboratories; (d) to undertake a feasibility study in collaboration with Mongolian scientists and engineers to explore low-cost options for school building insulation; and (e) to set up distance learning installations.

## D. Conclusion

3.30 The magnitude of the contraction of public resources in general and in education expenditures in particular is unprecedented, not only in Mongolia but also in most countries of the world. The three complementary strategies of rationalization, reallocation, and mobilization of resources aim at improving efficiency, distributing the cost of adjustment more equitably, assuring minimum quality, and strengthening labor market linkages. If the challenge of continuing investments in human capital under extremely adverse conditions can be met, there will be a strong foundation for future development.

# ANNEXES

ANNEX 1.1

## EMPLOYMENT BY SECTOR, 1990

| | No. of Employees ('000) | Percentage of Total |
|---|---|---|
| Material Sector | 468.8 | 71.9 |
| Agriculture | 178.3 | 27.4 |
| Forestry | 2.6 | 0.4 |
| Industry | 135.6 | 20.8 |
| Construction | 51.4 | 7.9 |
| Transport | 50.8 | 7.8 |
| Communications | 7.1 | 1.1 |
| Trade | 42.2 | 6.5 |
| Other material production | 0.6 | 0.1 |
| Nonmaterial Sector | 182.7 | 27.9 |
| Housing & municipal services | 27.4 | 4.2 |
| Science, research and development | 12.9 | 2.0 |
| Education, culture and arts | 69.5 | 10.7 |
| Health care, social security, sports | 44.1 | 6.8 |
| Banking, finance, credit, insurance | 3.1 | 0.5 |
| Government | 20.8 | 3.2 |
| Other nonmaterial | 4.9 | 0.8 |
| Total | 648.4 | 100.0 |

Source: State Statistical Office.

ANNEX 1.2

## EMPLOYMENT IN THE STATE SECTOR, 1990

| | No. of Employees ('000) | Percentage of Total |
|---|---|---|
| Agriculture | 40.1 | 8.7 |
| Forestry | 2.6 | 0.6 |
| Industry | 114.6 | 24.7 |
| Construction | 46.4 | 10.0 |
| Transport | 42.8 | 9.2 |
| Communications | 7.1 | 1.5 |
| Trade | 40.6 | 8.8 |
| Other material production | 0.6 | 0.1 |
| Housing & municipal services | 23.1 | 5.0 |
| Science, research and development | 12.9 | 2.8 |
| Education, culture and arts | 68.8 | 14.8 |
| Health care, social security, sports | 43.6 | 9.4 |
| Banking, finance, credit, insurance | 3.0 | 0.6 |
| Government | 12.8 | 2.8 |
| Other nonmaterial | 4.9 | 1.1 |
| Total | 463.9 | 100.0 |

Source: State Statistical Office.

## EDUCATIONAL ATTAINMENT OF POPULATION AGED 15 AND OVER, 1989

| | Higher Education | Post-Secondary | Vocational Secondary | 10-year Schools | 8-year Schools | Primary Education | Literate but No Schooling | Illiterate | Total |
|---|---|---|---|---|---|---|---|---|---|
| Age 15-19 | - | 159 | 2,269 | 39,144 | 118,221 | 57,220 | 2,342 | 2,225 | |
| Age 20-24 | 5,492 | 4,827 | 21,289 | 69,377 | 79,728 | 11,284 | 1,997 | 2,058 | |
| Age 25-29 | 18,610 | 2,056 | 24,778 | 45,043 | 69,099 | 16,311 | 2,134 | 1,512 | |
| Age 30-34 | 16,512 | 1,237 | 20,640 | 25,049 | 50,544 | 18,745 | 1,610 | 947 | |
| Age 35-39 | 13,411 | 830 | 15,667 | 15,476 | 28,481 | 16,662 | 1,406 | 682 | |
| Age 40-44 | 12,255 | 623 | 10,299 | 9,268 | 18,110 | 17,221 | 1,946 | 666 | |
| Age 45-49 | 9,787 | 517 | 7,634 | 5,504 | 15,238 | 24,118 | 4,232 | 1,257 | |
| Age 50-54 | 5,897 | 376 | 4,487 | 2,847 | 9,586 | 24,074 | 6,550 | 1,613 | |
| Age 55-59 | 4,012 | 392 | 3,237 | 1,808 | 6,690 | 22,203 | 9,613 | 2,265 | |
| 60 & Over | 3,055 | 672 | 3,220 | 1,889 | 6,539 | 36,300 | 39,304 | 27,884 | |
| Subtotal | 89,031 | 11,689 | 113,520 | 215,405 | 402,236 | 244,138 | 71,134 | 41,109 | 1,188,262 |
| % of Total | 7.5 | 1.0 | 9.6 | 18.1 | 33.9 | 20.6 | 6.0 | 3.5 | |

Source: Ministry of Science and Education.

ANNEX 2.1

**ESTIMATED SCHOOL-AGE POPULATION AND GROSS ENROLLMENT RATIOS (GER), 1989**
**(BASED ON CENSUS OF 1989, JULY 15)**

| | No. of School-age Children | Enrollment 1989/90 | GER |
|---|---|---|---|
| Primary and Secondary | | | |
| Age 7/Gr. 1 | 54,972 | 58,063 | 1.06 |
| Age 8/Gr. 2 | 55,101 | 55,019 | 1.00 |
| Age 9/Gr. 3 | 52,237 | 51,691 | 0.99 |
| Age 10/Gr. 4 | 53,735 | 52,855 | 0.98 |
| Age 11/Gr. 5 | 50,826 | 47,739 | 0.94 |
| Age 12/Gr. 6 | 50,865 | 47,076 | 0.93 |
| Age 13/Gr. 7 | 50,131 | 45,915 | 0.92 |
| Age 14/Gr. 8 | 50,089 | 46,073 | 0.92 |
| Age 15/Gr. 9 | 48,631 | 20,994 | 0.43 |
| Age 16/Gr.10 | 46,558 | 19,295 | 0.41 |
| Total | 513,145 | 444,720 | 0.87 |
| Vocational | | | |
| Age 15/Yr. 1 | 48,631 | 13,322 | 0.27 |
| Age 16/Yr. 2 | 46,558 | 11,445 | 0.25 |
| Age 17/Yr. 3 | 41,494 | 6,427 | 0.15 |
| Total | 136,683 | 31,194 | 0.23 |
| Colleges | | | |
| Age 17/Yr. 1 | 41,494 | 5,386 | 0.13 |
| Age 18/Yr. 2 | 44,056 | 5,049 | 0.12 |
| Age 19/Yr. 3 | 40,841 | 4,223 | 0.10 |
| Age 20/Yr. 4 | 41,584 | 2,618 | 0.06 |
| Total | 167,975 | 17,276 | 0.10 |
| Universities | | | |
| Age 17/Yr. 1 | 41,494 | 2,538 | 0.06 |
| Age 18/Yr. 2 | 44,056 | 2,435 | 0.06 |
| Age 19/Yr. 3 | 40,841 | 2,714 | 0.06 |
| Age 20/Yr. 4 | 41,584 | 2,466 | 0.06 |
| Age 21/Yr. 5 | 39,366 | 1,694 | 0.04 |
| Age 22/Yr. 6 | 39,006 | 308 | 0.01 |
| Total | 246,347 | 12,155 | 0.05 |

Source: Ministry of Science and Education.

## ESTIMATED SCHOOL-AGE POPULATION AND GROSS ENROLLMENT RATIOS, 1992-93
## (Based on Census of 1989, July 15)

| | No. of School-age Children | Enrollment 9/25/92 | GER | Enrollment 12/25/92 | GER | Out-of-school Children (Gr. 1-8) |
|---|---|---|---|---|---|---|
| Primary and Secondary | | | | | | |
| Age 7/Gr. 1 | 61,091 | 51,925 | 0.85 | 49,732 | 0.81 | 11,359 |
| Age 8/Gr. 2 | 56,650 | 43,901 | 0.77 | 41,810 | 0.74 | 14,840 |
| Age 9/Gr. 3 | 56,219 | 48,587 | 0.86 | 46,892 | 0.83 | 9,327 |
| Age 10/Gr. 4 /a | 54,972 | 14,704 | 0.27 | 14,725 | 0.27 | 40,247 |
| Age 11/Gr. 5 /a | 55,101 | 76,353 | 1.39 | 73,037 | 1.33 | -17,936 |
| Age 12/Gr. 6 | 52,237 | 40,189 | 0.77 | 38,131 | 0.73 | 14,106 |
| Age 13/Gr. 7 | 53,735 | 39,767 | 0.74 | 38,011 | 0.71 | 15,724 |
| Age 14/Gr. 8 | 50,826 | 35,116 | 0.69 | 34,025 | 0.67 | 16,801 |
| Age 15/Gr. 9 | 50,865 | 17,171 | 0.34 | 16,800 | 0.33 | |
| Age 16/Gr.10 | 50,131 | 16,356 | 0.33 | 15,929 | 0.32 | |
| Total | 541,827 | 384,069 | 0.71 | 369,092 | 0.68 | 104,468 |
| Vocational | | | | | | |
| Age 15/Yr. 1 | 50,865 | - | - | 4,370 | 0.09 | |
| Age 16/Yr. 2 | 50,131 | - | - | 4,987 | 0.10 | |
| Age 17/Yr. 3 | 50,089 | - | - | 1,183 | 0.02 | |
| Total | 151,085 | - | - | 10,540 | 0.07 | |
| Colleges | | | | | | |
| Age 17/Yr. 1 | 50,089 | - | - | 1,912 | 0.04 | |
| Age 18/Yr. 2 | 48,631 | - | - | 2,223 | 0.05 | |
| Age 19/Yr. 3 | 46,558 | - | - | 2,409 | 0.05 | |
| Age 20/Yr. 4 | 41,494 | - | - | 1,471 | 0.04 | |
| Total | 145,278 | - | - | 8,015 | 0.06 | |
| Universities | | | | | | |
| Age 17/Yr. 1 | 50,089 | - | - | 4,591 | 0.09 | |
| Age 18/Yr. 2 | 48,631 | - | - | 3,534 | 0.07 | |
| Age 19/Yr. 3 | 46,558 | - | - | 2,531 | 0.05 | |
| Age 20/Yr. 4 | 41,494 | - | - | 2,055 | 0.05 | |
| Age 21/Yr. 5 | 44,056 | - | - | 1,723 | 0.04 | |
| Age 22/Yr. 6 | 40,841 | - | - | 469 | 0.01 | |
| Total | 271,669 | - | - | 14,903 | 0.05 | |

/a Due to merging of 7-year and 8-year curricula in 1992, students who started school at age 8 were promoted directly to Grade 5 without going through Grade 4. This led to the drastic drop in enrollment in Grade 4 and rise in Grade 5.

Source: Ministry of Science and Education.

ANNEX 2.3

## GIRLS ENROLLMENT IN PRIMARY AND SECONDARY EDUCATION BY REGION, JANUARY 1993

| | Total Enrollment | Girls Enrollment | Girls as % of Total |
|---|---|---|---|
| Arhangay | 14,754 | 8,227 | 56 |
| Bayan-Olgiy | 12,606 | 6,682 | 53 |
| BayanHongor | 12,990 | 7,070 | 54 |
| Bulgan | 9,472 | 5,259 | 56 |
| Gobi-Altay | 11,623 | 6,524 | 56 |
| Dornod | 8,472 | 4,612 | 54 |
| DornoGobi | 15,513 | 7,126 | 46 |
| DundGobi | 8,155 | 4,677 | 57 |
| Dzavhan | 15,968 | 7,888 | 49 |
| Ovorhangay | 14,295 | 8,091 | 57 |
| OmnoGobi | 7,096 | 3,994 | 56 |
| Sukbaatar | 9,395 | 5,195 | 55 |
| Selenge | 17,571 | 9,633 | 55 |
| Tov | 18,595 | 10,465 | 56 |
| Uvs | 15,162 | 8,555 | 56 |
| Hovd | 13,356 | 7,400 | 55 |
| Hovsgol | 16,547 | 9,407 | 57 |
| Hentiy | 12,896 | 7,135 | 55 |
| Aimag Total | 234,466 | 127,940 | 55 |
| Darhan | 15,847 | 8,516 | 54 |
| Ulaanbaatar | 104,813 | 54,918 | 52 |
| Erdenet | 9,670 | 5,172 | 53 |
| Chor | 2,182 | 1,292 | 59 |
| Special | 2,114 | 1,252 | 59 |
| City Total | 134,626 | 71,150 | 53 |
| Total | 369,092 | 199,090 | 54 |

Source: Ministry of Science and Education.

## GIRLS ENROLLMENT BY GRADE, JANUARY 1993

| | Total Enrollment | Girls Enrollment | Girls as % of Total |
|---|---|---|---|
| Kindergarten | 85,691 | 45,855 | 54 |
| Primary and Secondary | | | |
| Grade 1 | 49,732 | 24,877 | 50 |
| Grade 2 | 41,810 | 20,995 | 50 |
| Grade 3 | 46,892 | 23,876 | 51 |
| Grade 4 | 14,725 | 7,753 | 53 |
| Grade 5 | 73,037 | 37,972 | 52 |
| Grade 6 | 38,131 | 21,109 | 55 |
| Grade 7 | 38,011 | 21,419 | 56 |
| Grade 8 | 34,025 | 19,542 | 57 |
| Grade 9 | 16,800 | 11,187 | 67 |
| Grade 10 | 15,929 | 10,360 | 65 |
| Total | 369,092 | 199,090 | 54 |
| Vocational | | | |
| Year 1 | 4,370 | 2,376 | 54 |
| Year 2 | 4,987 | 2,627 | 53 |
| Year 3 | 1,183 | 380 | 32 |
| Total | 10,540 | 5,383 | 51 |
| Colleges | | | |
| Year 1 | 1,912 | 1,486 | 78 |
| Year 2 | 2,223 | 1,776 | 80 |
| Year 3 | 2,409 | 1,733 | 72 |
| Year 4 | 1,471 | 862 | 59 |
| Total | 8,015 | 5,857 | 73 |
| Universities | | | |
| Year 1 | 4,591 | 3,083 | 67 |
| Year 2 | 3,534 | 2,259 | 64 |
| Year 3 | 2,531 | 1,521 | 60 |
| Year 4 | 2,055 | 1,209 | 59 |
| Year 5 | 1,723 | 1,078 | 63 |
| Year 6 | 469 | 321 | 68 |
| Total | 14,903 | 9,471 | 64 |

Source: Ministry of Science and Education.

ANNEX 2.5

## FEMALE STUDENTS AND TEACHERS IN PROPORTION TO TOTAL IN HIGHER EDUCATION

| | Students | | | Teachers | | |
|---|---|---|---|---|---|---|
| | Total | Female | % of Total | Total | Female | % of Total |
| Professional Schools in Tov Aimag | 8,090 | 4,047 | 50.0 | 746 | 419 | 56.2 |
| Mixed Voc. & Technical Schools | 2,982 | 1,713 | 57.4 | 213 | 128 | 60.1 |
| Technical Schools & Colleges | 2,256 | 1,988 | 88.1 | 147 | 87 | 59.2 |
| Colleges | 7,749 | 5,537 | 71.4 | 618 | 336 | 54.4 |
| Mongolian State University in Hovd | 413 | 280 | 67.8 | 38 | 7 | 18.4 |
| Assorted Schools in UB & Erdenet | 433 | 158 | 36.5 | 14 | 6 | 42.9 |
| Language Institute | 741 | 552 | 74.5 | 72 | 60 | 83.3 |
| Mongolian State University | 2,589 | 1,505 | 58.1 | 289 | 93 | 32.2 |
| Technical University | 4,038 | 1,528 | 37.8 | 398 | 128 | 32.2 |
| Pedagogical University | 1,589 | 1,150 | 72.4 | 153 | 38 | 24.8 |
| Agriculture University | 1,012 | 494 | 48.8 | 95 | 25 | 26.3 |
| Medical University | 2,669 | 2,110 | 79.1 | 244 | 122 | 50.0 |
| Cultural Institute | 358 | 185 | 51.7 | 93 | 53 | 57.0 |
| Privatized Schools | 1,797 | 1,222 | 68.0 | 72 | 30 | 41.7 |
| Total | 36,716 | 22,469 | 61.2 | 3,192 | 1,532 | 48.0 |

Source: Ministry of Science and Education.

## ENROLLMENT OF WOMEN IN TERTIARY EDUCATION BY FIELDS, 1991

| | Higher education | | | Post-secondary technical and specialized schools | | |
|---|---|---|---|---|---|---|
| | Total students | Female students | % of women | Total students | Female students | % of women |
| Pedagogy | 1,991 | 1,516 | 76 | 2,720 | 2,188 | 80 |
| Medicine | 3,075 | 2,255 | 73 | 3,559 | 3,191 | 89 |
| Trade and business | 629 | 398 | 63 | 1,804 | 1,265 | 70 |
| Foreign languages | 740 | 579 | 78 | | | |
| Social sciences | 31 | 22 | 71 | | | |
| Mathematics | 206 | 102 | 50 | | | |

Source: Ministry of Science and Education.

ANNEX 2.6

## ENROLLMENT IN BOARDING SCHOOLS, 1993

| | Total Enrollment | Boarding School Enrollment | Boarders as % of Total |
|---|---|---|---|
| Arhangay | 14,970 | 2,222 | 14.8 |
| Bayan-Olgiy | 12,453 | 1,920 | 15.4 |
| BayanHongor | 14,400 | 3,337 | 23.2 |
| Bulgan | 10,226 | 1,509 | 14.8 |
| Gobi-Altay | 12,388 | 3,056 | 24.7 |
| Dornod | 8,932 | 498 | 5.6 |
| DornoGobi | 15,775 | 560 | 3.6 |
| DundGobi | 8,607 | 904 | 10.5 |
| Dzavhan | 15,641 | 2,680 | 17.1 |
| Ovorhangay | 15,984 | 2,554 | 16.0 |
| OmnoGobi | 7,409 | 1,093 | 14.8 |
| Sukhbaatar | 10,364 | 1,634 | 15.8 |
| Selenge | 18,010 | 925 | 5.1 |
| Tov | 19,325 | 2,359 | 12.2 |
| Uvs | 16,166 | 2,522 | 15.6 |
| Hovd | 14,157 | 2,255 | 15.9 |
| Hovsgol | 17,298 | 3,881 | 22.4 |
| Hentiy | 13,490 | 893 | 6.6 |
| Aimag Total | 245,595 | 34,802 | 14.2 |
| Darhan | 16,187 | 55 | 0.34 |
| Ulaanbaatar | 108,326 | 432 | 0.4 |
| Erdenet | 9,684 | 37 | 0.4 |
| Chor | 2,377 | 42 | 1.8 |
| Special | 1,900 | | |
| City Total | 138,474 | 566 | 0.4 |
| Total | 384,069 | 35,368 | 9.2 |

Source: Ministry of Science and Education.

## DROPOUT FROM PRIMARY AND SECONDARY EDUCATION IN 1991-92 AND FALL 1992

| | Dropout in 1991-92 | | | Dropout in Fall 1992 | | |
|---|---|---|---|---|---|---|
| | Total Changes | Total Enrollment | % of Total Enrollment | Total Changes | Total Enrollment | % of Total Enrollment |
| Arhangay | 1,359 | 16,866 | 8.1 | 216 | 14,970 | 1.4 |
| Bayan-Olgiy | 1,085 | 17,737 | 6.1 | -153 | 12,453 | -1.2 |
| BayanHongor | 1,034 | 15,359 | 6.7 | 1,410 | 14,400 | 9.8 |
| Bulgan | 517 | 11,028 | 4.7 | 754 | 10,226 | 7.4 |
| Gobi-Altay | 1,334 | 13,028 | 10.2 | 765 | 12,388 | 6.2 |
| Dornod | 213 | 9,402 | 2.3 | 460 | 8,932 | 5.2 |
| DornoGobi | 532 | 16,050 | 3.3 | 262 | 15,775 | 1.7 |
| DundGobi | 1,518 | 9,112 | 16.7 | 452 | 8,607 | 5.3 |
| Dzavhan | 703 | 18,585 | 3.8 | -327 | 15,641 | -2.1 |
| Ovorhangay | 1,919 | 18,062 | 10.6 | 1,689 | 15,984 | 10.6 |
| OmnoGobi | 463 | 7,757 | 6.0 | 313 | 7,409 | 4.2 |
| Sukhbaatar | 621 | 10,864 | 5.7 | 969 | 10,364 | 9.4 |
| Selenge | 340 | 19,031 | 1.8 | 439 | 18,010 | 2.4 |
| Tov | 1,357 | 21,069 | 6.4 | 730 | 19,325 | 3.8 |
| Uvs | 1,418 | 17,583 | 8.1 | 1,004 | 16,166 | 6.2 |
| Hovd | 1,151 | 15,941 | 7.2 | 801 | 14,157 | 5.7 |
| Hovsgol | 1,832 | 19,950 | 9.2 | 751 | 17,298 | 4.3 |
| Hentiy | 1,416 | 14,365 | 9.9 | 594 | 13,490 | 4.4 |
| Aimag Total | 18,812 | 271,789 | 6.9 | 11,129 | 245,595 | 4.5 |
| Darhan | 59 | 16,870 | 0.4 | 340 | 16,187 | 2.1 |
| Ulaanbaatar | 1,217 | 109,354 | 1.1 | 3,513 | 108,326 | 3.2 |
| Erdenet | 10 | 9,748 | 0.1 | 14 | 9,684 | 0.1 |
| Chor | 36 | 2,387 | 1.51 | 195 | 2,377 | 8.2 |
| Special | 1,547 | 0 | 0.0 | -214 | 1,900 | -11.3 |
| City Total | 1,322 | 139,906 | 0.9 | 3,848 | 138,474 | 2.8 |
| Total | 20,134 | 411,695 | 4.9 | 14,977 | 384,069 | 3.9 |

Source: Ministry of Science and Education.

## CHANGES IN ENROLLMENT, SEPTEMBER 25 - DECEMBER 25, 1992

| | I | II | III | IV | V | VI | VII | VIII | IX | X | Changes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arhangay | 77 | 79 | 31 | -75 | -54 | 65 | 65 | 5 | 24 | -1 | 216 |
| Bayan-Olgiy | 17 | -11 | -54 | 49 | -76 | -32 | -8 | -15 | 8 | -31 | -153 |
| BayanHongor | 201 | 160 | 161 | -73 | 429 | 225 | 127 | 89 | 57 | 34 | 1,410 |
| Bulgan | 92 | 81 | 95 | 34 | 145 | 127 | 67 | 103 | 2 | 8 | 754 |
| Gobi-Altay | 82 | 71 | 106 | 18 | 212 | 88 | 85 | 52 | 39 | 12 | 765 |
| Dornod | 99 | 69 | 57 | 4 | 117 | 28 | 54 | 34 | -7 | 5 | 460 |
| DornoGobi | 38 | 48 | 85 | -36 | 38 | 0 | 57 | 12 | 95 | -75 | 262 |
| DundGobi | 83 | 52 | 98 | 1 | 86 | 29 | 35 | 28 | 22 | 18 | 452 |
| Dzavhan | -82 | -40 | -75 | 109 | -111 | -3 | -38 | -70 | -37 | 20 | -327 |
| Ovorhangay | 284 | 186 | 208 | 31 | 446 | 326 | 119 | 109 | -21 | 1 | 1,689 |
| OmnoGobi | 28 | 47 | 30 | 6 | 97 | 44 | 8 | 36 | 14 | 3 | 313 |
| Sukhbaatar | 106 | 122 | 223 | -7 | 188 | 118 | 103 | 66 | 29 | 21 | 969 |
| Selenge | 135 | 2 | 18 | -189 | 343 | 34 | 62 | 2 | 39 | -7 | 439 |
| Tov | 56 | 117 | 88 | 51 | 142 | 116 | 115 | 58 | -16 | 3 | 730 |
| Uvs | 116 | 119 | 113 | 7 | 324 | 149 | 119 | 28 | 29 | 0 | 1,004 |
| Hovd | 82 | 67 | 83 | 6 | 201 | 108 | 125 | 71 | 43 | 15 | 801 |
| Hovsgol | 110 | 141 | 121 | 2 | 123 | 60 | 99 | 32 | 52 | 11 | 751 |
| Hentiy | 87 | 44 | 62 | 43 | 119 | 77 | 95 | 71 | -13 | 9 | 594 |
| Aimag Total | | | | | | | | | | | 11,129 |
| Darhan | 53 | 112 | -30 | 22 | 65 | 27 | 33 | 59 | 13 | -14 | 340 |
| Ulaanbaatar | 429 | 452 | 302 | 196 | 498 | 457 | 517 | 386 | 60 | 216 | 3,513 |
| Erdenet | 74 | 7 | -7 | -8 | 7 | 20 | -34 | -42 | -16 | 13 | 14 |
| Chor | 14 | 151 | 15 | 2 | 4 | 9 | -8 | 7 | -4 | 5 | 195 |
| Special | 12 | 15 | -35 | -214 | -27 | -14 | -41 | -30 | -41 | 161 | -214 |
| City Total | | | | | | | | | | | 3,848 |
| Total | 2,193 | 2,091 | 1,695 | -21 | 3,316 | 2,058 | 1,756 | 1,091 | 371 | 427 | 14,977 |

Source: Ministry of Science and Education.

## DROPOUTS IN GRADES 1-3, SEPTEMBER 25, 1992 - DECEMBER 25, 1992

| | Grade 1 | | | Grade 2 | | | Grade 3 | | | Grades 1-3 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Drop-outs | Enrollment | Dropout Rate | Drop-outs | Enrollment | Dropout Rate | Drop-outs | Enrollment | Dropout Rate | Drop-outs | Enrollment | Dropout Rate |
| Arhangay | 77 | 2,076 | 3.7 | 79 | 1,939 | 4.0 | 31 | 1,926 | 1.6 | 187 | 5,941 | 3.2 |
| Bayan-Olgiy | 17 | 1,910 | 0.9 | -11 | 1,525 | -0.7 | -54 | 1,382 | -3.9 | -48 | 4,817 | -1.0 |
| BayanHongor | 201 | 1,991 | 10.1 | 160 | 1,656 | 9.7 | 161 | 1,847 | 8.7 | 522 | 5,494 | 9.5 |
| Bulgan | 92 | 1,294 | 7.1 | 81 | 1,147 | 7.0 | 95 | 1,330 | 7.1 | 268 | 3,771 | 7.1 |
| Gobi-Altay | 82 | 1,593 | 5.2 | 71 | 1,310 | 5.4 | 106 | 1,560 | 6.8 | 259 | 4,463 | 5.8 |
| Dornod | 99 | 1,366 | 7.3 | 69 | 1,143 | 6.0 | 57 | 1,197 | 4.8 | 225 | 3,706 | 6.1 |
| DornoGobi | 38 | 2,237 | 1.7 | 48 | 1,646 | 2.9 | 85 | 2,104 | 4.0 | 171 | 5,987 | 2.9 |
| DundGobi | 83 | 1,385 | 6.0 | 52 | 1,155 | 4.5 | 98 | 1,222 | 8.0 | 233 | 3,762 | 6.2 |
| Dzavhan | -82 | 2,017 | -4.1 | -40 | 1,775 | -2.2 | -75 | 1,883 | -4.0 | -197 | 5,675 | -3.5 |
| Ovorhangay | 284 | 2,462 | 11.5 | 186 | 1,764 | 10.5 | 208 | 2,205 | 9.4 | 678 | 6,431 | 10.5 |
| OmnoGobi | 28 | 1,214 | 2.3 | 47 | 884 | 5.3 | 30 | 1,067 | 2.8 | 105 | 3,165 | 3.3 |
| Sukhbaatar | 106 | 1,368 | 7.8 | 122 | 936 | 13.0 | 223 | 1,443 | 15.5 | 451 | 3,747 | 12.0 |
| Selenge | 135 | 2,417 | 5.6 | 2 | 1,945 | 0.1 | 18 | 2,374 | 0.8 | 155 | 6,736 | 2.3 |
| Tov | 56 | 2,597 | 2.2 | 117 | 2,132 | 5.5 | 88 | 2,579 | 3.4 | 261 | 7,308 | 3.6 |
| Uvs | 116 | 2,200 | 5.3 | 119 | 1,830 | 6.5 | 113 | 1,785 | 6.3 | 348 | 5,815 | 6.0 |
| Hovd | 82 | 1,925 | 4.3 | 67 | 1,591 | 4.2 | 83 | 1,774 | 4.7 | 232 | 5,290 | 4.4 |
| Hovsgol | 110 | 2,498 | 4.4 | 141 | 1,993 | 7.1 | 121 | 2,208 | 5.5 | 372 | 6,699 | 5.6 |
| Hentiy | 87 | 1,896 | 4.6 | 44 | 1,611 | 2.7 | 62 | 1,768 | 3.5 | 193 | 5,275 | 3.7 |
| Aimag Total | 1,611 | 34,446 | 4.7 | 1,354 | 27,982 | 4.8 | 1,450 | 31,654 | 4.6 | 4,415 | 94,082 | 4.7 |
| Darhan | 53 | 2,004 | 2.6 | 112 | 1,714 | 6.5 | -30 | 2,074 | -1.5 | 135 | 5,792 | 2.3 |
| Ulaanbaatar | 429 | 13,436 | 3.2 | 452 | 12,409 | 3.6 | 302 | 13,160 | 2.3 | 1,183 | 39,005 | 3.0 |
| Erdenet | 74 | 1,477 | 5.0 | 7 | 1,264 | 0.6 | -7 | 1,264 | -0.6 | 74 | 4,005 | 1.9 |
| Chor | 14 | 341 | 4.1 | 151 | 302 | 50.0 | 15 | 322 | 4.7 | 180 | 965 | 18.7 |
| Special | 12 | 221 | 5.4 | 15 | 230 | 6.5 | -35 | 113 | -31.0 | -8 | 564 | -1.4 |
| City Total | 582 | 17,479 | 3.3 | 737 | 15,919 | 4.6 | 245 | 16,933 | 1.5 | 1,564 | 50,331 | 3.1 |
| Total | 2,193 | 51,925 | 4.2 | 2,091 | 43,901 | 4.8 | 1,695 | 48,587 | 3.5 | 5,979 | 144,413 | 4.1 |

Source: Ministry of Science and Education.

## DISTRIBUTION OF OVERSEAS STUDENTS BY COUNTRY, 1992-93

| | Existing Students | Graduates | New Students | Total |
|---|---|---|---|---|
| Russia /a | 1,800 | 235 | 20 | 1,585 |
| Ukraine | 385 | 141 | 26 | 270 |
| Turkey | 19 | - | 20 | 39 |
| Romania | 12 | 6 | - | 6 |
| Poland | 23 | 14 | 3 | 12 |
| Hungary | 54 | 24 | 10 | 40 |
| Korea, Rep. of | 3 | - | - | 3 |
| China | 44 | 9 | 15 | 50 |
| Germany | 324 | 180 | - | 144 |
| India | 8 | 1 | 8 | 15 |
| Japan | 24 | 9 | 21 | 36 |
| Czechoslovakia | 150 | 18 | - | 132 |
| Bulgaria | 81 | 14 | - | 67 |
| Korea, DPR | 25 | 2 | - | 23 |
| Total | 2,952 | 653 | 123 | 2,422 |

/a Only students studying in Russia are provided stipends of 1,500 rubles per student, amounting to Tugrik 40 million in 1992-93.

Source: Ministry of Science and Education.

## STUDENT-TO-TEACHER RATIOS BY LEVEL OF EDUCATION, 1991-92

| | Total | Cities | Aimags |
|---|---|---|---|
| Primary and Secondary | | | |
| 4-year schools | 22 | 25 | 21 |
| 8-year schools | 19 | 32 | 18 |
| 10-year schools | 21 | 28 | 20 |
| Total | 20 | 28 | 19 |
| Vocational | 16 | 20 | 13 |
| Post-Secondary | 11 | 10 | 15 |
| Higher | 10 | 10 | 10 |

## DISTRIBUTION OF STUDENTS AND TEACHERS BY TYPE OF SCHOOL, 1991-92

| | Total | % of Total | Cities | % of Cities | Aimags | % of Aimags |
|---|---|---|---|---|---|---|
| Students | | | | | | |
| 4-year | 9,960 | 2.4 | 1,342 | 1.0 | 8,618 | 3.2 |
| 8-year | 95,578 | 23.2 | 23,894 | 17.2 | 71,161 | 26.2 |
| 10-year | 306,158 | 74.4 | 113,123 | 81.8 | 192,011 | 70.7 |
| Total | 411,696 | 100.0 | 138,359 | 100.0 | 271,790 | 100.0 |
| % of total | 100.0 | | 33.6 | | 66.0 | |
| Teachers | | | | | | |
| 4-year | 462 | 2.3 | 53 | 1.1 | 409 | 2.9 |
| 8-year | 4,929 | 24.0 | 741 | 15.0 | 3,902 | 27.7 |
| 10-year | 14,739 | 72.0 | 4,022 | 81.2 | 9,683 | 68.9 |
| Special /a | 351 | 1.7 | 139 | 2.8 | 70 | 0.5 |
| Total | 20,481 | 100.0 | 4,955 | 100.0 | 14,064 | 100.0 |
| % of total | 100.0 | | 24.2 | | 68.7 | |

*Source*: World Bank missions to Mongolia in 1992 and 1993.

ANNEX 3.2

## STUDENT-TO-TEACHER RATIOS, 1991-92

| | No. of students | No. of teachers | Student-to-teacher ratio |
|---|---|---|---|
| Primary and Secondary | | | |
| Arhangay | 16,866 | 909 | 19 |
| Bayanolgin | 17,737 | 1,049 | 17 |
| Bayanhongor | 15,359 | 797 | 19 |
| Bulgan | 11,928 | 594 | 20 |
| Gobi-Altay | 13,028 | 666 | 20 |
| DornoGobi | 9,402 | 455 | 21 |
| Dornod | 16,050 | 693 | 23 |
| DundGobi | 9,112 | 566 | 16 |
| Dzavhan | 18,585 | 1,113 | 17 |
| Ovorhangay | 18,062 | 1,018 | 18 |
| OmnoGobi | 7,757 | 426 | 18 |
| Sukbaatar | 10,864 | 510 | 21 |
| Selenge | 19,031 | 832 | 23 |
| Central | 21,069 | 918 | 23 |
| Uvs | 17,583 | 942 | 19 |
| Hovd | 15,942 | 784 | 20 |
| Hovsgul | 19,950 | 1,103 | 18 |
| Hentiy | 14,365 | 689 | 21 |
| Total of Aimags | 271,790 | 14,064 | 19 |
| Darhan | 16,870 | 773 | 22 |
| Ulaanbaatar | 109,354 | 4,955 | 22 |
| Erdenet | 9,748 | 471 | 21 |
| Khotin Dun | 2,387 | 119 | 20 |
| Total of Cities | 138,359 | 6,318 | 22 |
| Total of Aimags & Cities | 411,696 | 20,481 | 20 |

*...Continued*

ANNEX 3.2

| | No. of students | No. of teachers | Student-to-teacher ratio |
|---|---|---|---|
| Vocational | | | |
| Arhangay | 514 | 36 | 14 |
| Bayanolgin | 798 | 67 | 12 |
| Bayanhongor | 462 | 38 | 12 |
| Bulgan | 351 | 21 | 17 |
| Gobi-Altai | 454 | 26 | 17 |
| DornoGobi | 217 | 16 | 14 |
| Dornod | 352 | 36 | 10 |
| DundGobi | 449 | 34 | 13 |
| Dzavhan | 661 | 41 | 16 |
| Ovorhangay | 616 | 45 | 14 |
| OmnoGobi | 249 | 16 | 16 |
| Sukbaatar | 0 | 0 | 0 |
| Selenge | 1,158 | 114 | 10 |
| Central | 1,325 | 98 | 14 |
| Uvs | 342 | 25 | 14 |
| Hovd | 0 | 0 | 0 |
| Hovsgul | 383 | 34 | 11 |
| Hentiy | 303 | 22 | 14 |
| Total of Aimags | 8,634 | 669 | 13 |
| Darhan | 1,840 | 98 | 19 |
| Ulaanbaatar | 7,005 | 333 | 21 |
| Erdenet | 482 | 32 | 15 |
| Khotin Dun | 0 | 0 | 0 |
| Total of Cities | 9,327 | 463 | 20 |
| Total of Aimags & Cities | 17,961 | 1,132 | 16 |

...Continued

ANNEX 3.2

| | No. of students | No. of teachers | Student-to-teacher ratio |
|---|---|---|---|
| College | | | |
| Arhangay | 480 | 32 | 15 |
| Bayanolgin | 141 | 11 | 13 |
| Bayanhongor | 0 | 0 | 0 |
| Bulgan | 598 | 47 | 13 |
| Gobi-Altai | 540 | 28 | 19 |
| DornoGobi | 564 | 59 | 10 |
| Dornod | 487 | 13 | 37 |
| Dzavhan | 382 | 26 | 15 |
| Selenge | 664 | 30 | 22 |
| Central | 20 | 10 | 2 |
| Hovd | 375 | 26 | 14 |
| Total of Aimags | 4,231 | 282 | 15 |
| Darhan | 1,883 | 88 | 21 |
| Ulaanbaatar | 8,294 | 900 | 9 |
| Erdenet | 221 | 12 | 18 |
| Total of Cities | 10,398 | 1,000 | 10 |
| Total of Aimags & Cities | 14,629 | 1,282 | 11 |
| Higher Education | | | |
| Hovd | 470 | 49 | 10 |
| Ulaanbaatar | 13,402 | 1,292 | 10 |
| Total | 13,872 | 1,341 | 10 |

Source: Ministry of Education.

ANNEX 3.3

## TEACHERS AS A PERCENTAGE OF TOTAL STAFF BY REGION AND BY LEVEL OF EDUCATION, 1991-92

| | Total Staff | Teachers | Teachers as % of Total Staff |
|---|---|---|---|
| Primary and Secondary Schools | | | |
| Arhangay | 2,001 | 909 | 45.4 |
| Bayan-olgiy | 2,226 | 1,049 | 47.1 |
| Bayanhongor | 1,691 | 797 | 47.1 |
| Bulgan | 1,282 | 594 | 46.3 |
| Gobi-Altay | 1,326 | 666 | 50.2 |
| DornoGobi | 816 | 455 | 55.8 |
| Dornod | 1,296 | 693 | 53.5 |
| DundGobi | 1,156 | 566 | 49.0 |
| Dzavhan | 2,938 | 1,113 | 37.9 |
| Ovorhangay | 2,068 | 1,018 | 49.2 |
| OmnoGobi | 851 | 426 | 50.1 |
| Sukbaatar | 982 | 510 | 51.9 |
| Selenge | 1,435 | 832 | 58.0 |
| Central | 1,876 | 918 | 48.9 |
| Uvs | 1,90[illegible] | 942 | 49.4 |
| Hovd | 1,641 | 784 | 47.8 |
| Hovsgul | 2,552 | 1,103 | 43.2 |
| Hentiy | 1,246 | 689 | 55.3 |
| Darhan | 1,174 | 773 | 65.8 |
| Ulaanbaatar | 7,456 | 5,054 | 67.8 |
| Erdenet | 675 | 471 | 69.8 |
| Chor | 195 | 119 | 61.0 |
| Total | 38,789 | 20,481 | 52.8 |
| Vocational Schools and Colleges | | | |
| Arhangay | 77 | 32 | 41.6 |
| Bayan-Olgiy | 25 | 11 | 44.0 |
| Bulgan | 128 | 47 | 36.7 |
| Gobi-Altai | 62 | 28 | 45.2 |
| DornoGobi | 95 | 59 | 62.1 |
| Dornod | 46 | 13 | 28.3 |
| Dzavhan | 66 | 26 | 39.4 |
| Selenge | 131 | 30 | 22.9 |
| Hovd | 73 | 26 | 35.6 |
| Darhan | 248 | 88 | 35.5 |
| Ulaanbaatar | 1,789 | 900 | 50.3 |
| Total | 2,740 | 1,260 | 46.0 |

*...Continued*

ANNEX 3.3

| | Total Staff | Teachers | Teachers as % of Total Staff |
|---|---|---|---|
| Higher Education | | | |
| Mongolian State University | 753 | 279 | 37.1 |
| Agricultural University | 329 | 138 | 41.9 |
| Medical University | 498 | 272 | 54.6 |
| Technical University | 602 | 304 | 50.5 |
| Institute of Languages | 158 | 74 | 46.8 |
| Institute of Culture | 83 | 60 | 72.3 |
| Teacher's Institute at Hovd | 143 | 49 | 34.3 |
| Pedagogical University | 386 | 165 | 42.7 |
| Total | 2,952 | 1,341 | 45.4 |

Source: Ministry of Education.

## TEACHERS, ADMINISTRATORS, AND OTHER NONINSTRUCTIONAL STAFF BY INSTITUTION, 1992-93 /a

| | No. of Teachers | Deans & Heads /b | Noninstructional Staff | Teachers as % of Total Staff |
|---|---|---|---|---|
| Vocational and Technical | | | | |
| Technical Schools in Central Aimag | 746 | 3 | 1053 | 41.4 |
| Mixed Vocational and Technical Schools | 213 | 7 | 314 | 39.9 |
| Technical Schools & Colleges | 147 | 2 | 207 | 41.3 |
| Colleges | 618 | 60 | 978 | 37.3 |
| Assorted Schools in UB & Erdenet | 14 | 10 | 30 | 26.2 |
| Higher Education | | | | |
| Mongolian National University | 289 | 54 | 385 | 39.7 |
| Mongolian National University in Hovd | 38 | 6 | 101 | 25.9 |
| Technical University | 398 | 46 | 565 | 39.4 |
| Pedagogical University | 153 | 32 | 193 | 40.5 |
| Agriculture University | 95 | 31 | 413 | 17.6 |
| Medical University | 244 | 28 | 220 | 49.6 |
| Cultural Institute | 93 | 7 | 68 | 55.4 |
| Language Institute | 72 | 6 | 90 | 42.9 |
| Private Tertiary Institutions | 72 | 3 | 99 | 41.4 |

/a There is a slight discrepancy in number of staff in this table from the previous table. This is due to the collection of statistics at different times of the year of 1992.

/b Deans and Heads of Departments are counted as staff rather than teachers.

*Source*: World Bank missions to Mongolia in 1992 and 1993.

ANNEX 3.5

## COMPOSITION OF TEACHING AND NONINSTRUCTIONAL STAFF, 1992-93 /a

| | Number of staff | % of Total Staff |
|---|---|---|
| Kindergarten | | |
| Principals | 785 | 5.5 |
| Teachers | 3,732 | 25.9 |
| Methodologists | 103 | 0.7 |
| Music Teachers | 366 | 2.5 |
| Assistant Teachers | 3,719 | 25.8 |
| Bookkeepers | 158 | 1.1 |
| Doctors | 121 | 0.8 |
| Others | 5,424 | 37.7 |
| Total Teaching Staff | 7,920 | 55.0 |
| Total Noninstructional Staff | 6,488 | 39.6 |
| Total Kindergarten Staff | 14,408 | 100.0 |
| Primary and Secondary Education | | |
| Principals | 617 | 1.8 |
| Vice Principals | 1,019 | 3.0 |
| Psychologists | 53 | 0.2 |
| Teachers | 19,441 | 56.9 |
| Heads of Departments | 28 | 0.1 |
| Aimag Inspectors | 72 | 0.2 |
| Aimag Methodology Chairmen | 22 | 0.1 |
| Methodologists | 116 | 0.3 |
| State Inspectors | 22 | 0.1 |
| Assistants | 372 | 1.1 |
| Accountants | 572 | 1.7 |
| Doctors | 251 | 0.7 |
| Librarians | 462 | 1.4 |
| Furniture Custodians | 978 | 2.9 |
| Typists | 388 | 1.1 |
| Doormen | 2,563 | 7.5 |
| Cleaners | 3,835 | 11.2 |
| Supervisors of organization | 14 | 0.0 |
| Others /b | 3,374 | 9.9 |
| Total Teaching Staff | 19,441 | 56.9 |
| Total Noninstructional Staff | 14,758 | 43.2 |
| Total Staff | 34,199 | 100.0 |

...Continued

| | Number of staff | % of Total Staff |
|---|---|---|
| Vocational, Post-Secondary Technical, and Higher Education | | |
| Teachers | 3,120 | 38.6 |
| Heads of Departments | 210 | 2.6 |
| Heads of Branches | 53 | 0.7 |
| Deans | 30 | 0.4 |
| Subject Supervisors | 41 | 0.5 |
| Vice Directors | 79 | 1.0 |
| Directors | 69 | 0.9 |
| Researchers | 67 | 0.8 |
| Research Assistants | 39 | 0.5 |
| Accountants | 177 | 2.2 |
| Furniture Custodians | 239 | 3.0 |
| Librarians | 166 | 2.1 |
| Doctors | 53 | 0.7 |
| Laboratory Assistants | 525 | 6.5 |
| Typists | 104 | 1.3 |
| Doormen | 660 | 8.2 |
| Cleaners | 1,022 | 12.6 |
| Others | 1,429 | 17.7 |
| Total Teaching Staff | 3,120 | 38.6 |
| Total Noninstructional Staff | 4,963 | 61.4 |
| Total | 8,083 | 100.0 |

/a To be consistent with the basis for calculating student-to-teacher ratio, only those who are directly involved in teaching are classified as teaching staff.

/b Others include cooks, heating maintenance personnel, and horsemen (messengers). Horsemen are particularly useful in the rural areas.

*Source*: World Bank missions to Mongolia in 1992 and 1993.

ANNEX 3.6

## MOVEMENT OF TEACHERS, 1992

| | Number of Teachers | | | |
|---|---|---|---|---|
| | 1/1/92 | 3/1/93 | Change | % of 1992 |
| Arhangay | 813 | 738 | 75 | 9.2 |
| Female | 586 | 560 | 26 | 4.4 |
| Bayan-Olgiy | 1,057 | 822 | 235 | 22.2 |
| Female | 558 | 453 | 105 | 18.8 |
| Bayanhongor | 780 | 780 | 0 | 0.0 |
| Female | 497 | 497 | 0 | 0.0 |
| Bulgan | 600 | 554 | 46 | 7.7 |
| Female | 417 | 398 | 19 | 4.6 |
| Gobi-Altay | 737 | 710 | 27 | 3.7 |
| Female | 477 | 462 | 15 | 3.1 |
| Dornogobi | 404 | 376 | 28 | 6.9 |
| Female | 310 | 296 | 14 | 4.5 |
| Dornod | 693 | 786 | -93 | -13.4 |
| Female | 448 | 521 | -73 | -16.3 |
| Dundgobi | 501 | 501 | 0 | 0.0 |
| Female | 360 | 360 | 0 | 0.0 |
| Dzavhan | 1,292 | 1,180 | 112 | 8.7 |
| Female | 915 | 879 | 36 | 3.9 |
| Ovorhangay | 1,143 | 1,124 | 19 | 1.7 |
| Female | 826 | 817 | 9 | 1.1 |
| Omnogobi | 472 | 443 | 29 | 6.1 |
| Female | 337 | 319 | 18 | 5.3 |
| Sukhbaatar | 510 | 480 | 30 | 5.9 |
| Female | 346 | 321 | 25 | 7.2 |
| Selenge | 887 | 910 | -23 | -2.6 |
| Female | 676 | 707 | -31 | -4.6 |
| Tov | 918 | 964 | -46 | -5.0 |
| Female | 681 | 711 | -30 | -4.4 |
| Uvs | 1,130 | 1,042 | 88 | 7.8 |
| Female | 813 | 760 | 53 | 6.5 |
| Hovd | 868 | 840 | 28 | 3.2 |
| Female | 477 | 531 | -54 | -11.3 |
| Hovsgol | 1,171 | 1,100 | 71 | 6.1 |
| Female | 800 | 729 | 71 | 8.9 |
| Hentiy | 863 | 834 | 29 | 3.4 |
| Female | 621 | 611 | 10 | 1.6 |
| Darhan | 773 | 794 | -21 | -2.7 |
| Female | 596 | 614 | -18 | -3.0 |
| UlaanBaatar | 5,124 | 5,137 | -13 | -0.3 |
| Female | 4,039 | 4,046 | -7 | -0.2 |
| Erdenet | 469 | 460 | 9 | 1.9 |
| Female | 368 | 376 | -8 | -2.2 |
| Chor | 116 | 110 | 6 | 5.2 |
| Female | 91 | 89 | 2 | 2.2 |
| Special | 38 | 38 | 0 | 0.0 |
| Female | 28 | 28 | 0 | 0.0 |
| Total | 21,359 | 20,731 | 628 | 2.9 |
| Female | 15,267 | 15,083 | 184 | 1.2 |

*Source:* World Bank missions to Mongolia in 1992 and 1993.

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## MOVEMENT OF TEACHERS BY REASON, 1992

| | Total | To other aimag | To other somon | To education fields | To other schools | To private | Retired | Died | Gone by streamlining | Gone by other reasons | Criminal | Gone for other reasons | From other university | From other aimag | From other city schools | Came for other reasons |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arhangay | 75 | 15 | 17 | 6 | 13 | 25 | 30 | 4 | 4 | 2 | 0 | 1 | -14 | -5 | -17 | -6 |
| Female | 26 | 11 | 11 | 2 | 3 | 2 | 18 | 0 | 1 | 2 | 0 | 1 | -12 | -3 | -7 | -3 |
| Bayan-Olgiy | 23 | 54 | 41 | 4 | 1 | 26 | 35 | 2 | 5 | 209 | 0 | 0 | -42 | -8 | -34 | -8 |
| Female | 105 | 2 | 30 | 0 | 0 | 2 | 28 | 0 | 2 | 114 | 0 | 0 | -36 | -5 | -27 | -5 |
| Bayanhongor | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Female | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bulgan | 46 | 33 | 9 | 4 | 7 | 34 | 3 | 0 | 1 | 2 | 0 | 0 | -26 | -8 | -8 | -5 |
| Female | 19 | 23 | 7 | 4 | 2 | 14 | 3 | 0 | 1 | 2 | 0 | 0 | -22 | -5 | -8 | -2 |
| Gobi-Altay | 27 | 21 | 16 | 3 | 7 | 12 | 26 | 1 | 3 | 9 | 0 | 3 | -27 | -5 | -23 | -19 |
| Female | 15 | 13 | 12 | 0 | 4 | 2 | 24 | 0 | 2 | 4 | 0 | 1 | -15 | -3 | -19 | -10 |
| Dornogobi | 28 | 27 | 15 | 3 | 19 | 8 | 7 | 3 | 1 | 6 | 0 | 1 | -20 | -2 | -18 | -22 |
| Female | 14 | 23 | 12 | 2 | 6 | 5 | 7 | 1 | 1 | 2 | 0 | 0 | -14 | -1 | -14 | -16 |
| Dornod | -93 | 11 | 76 | 7 | 6 | 24 | 21 | 4 | 7 | 17 | 0 | 2 | -24 | -6 | -72 | -166 |
| Female | -73 | 5 | 53 | 5 | 5 | 7 | 14 | 1 | 5 | 11 | 0 | 1 | -15 | -4 | -48 | -113 |
| Dundgobi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Female | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Darvhan | 104 | 21 | 79 | 11 | 25 | 25 | 43 | 5 | 6 | 3 | 1 | 6 | -47 | -10 | -50 | -14 |
| Female | 36 | 13 | 50 | 9 | 5 | 6 | 31 | 2 | 3 | 0 | 0 | 4 | -36 | -7 | -36 | -8 |
| Overhangay | 19 | 4 | 19 | 3 | 5 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | -17 | 0 | 0 | 0 |
| Female | 9 | 4 | 11 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | -12 | 0 | 0 | 0 |
| Omnogobi | 29 | 15 | 7 | 13 | 1 | 13 | 17 | 2 | 0 | 5 | 0 | 20 | -19 | -5 | -31 | -9 |
| Female | 18 | 10 | 6 | 6 | 0 | 6 | 13 | 1 | 0 | 3 | 0 | 13 | -12 | -5 | -21 | -2 |
| Sukhbaatar | 30 | 7 | 37 | 3 | 10 | 8 | 55 | 0 | 2 | 1 | 0 | 1 | -23 | -3 | -37 | -31 |
| Female | 25 | 4 | 24 | 1 | 2 | 1 | 36 | 0 | 1 | 0 | 0 | 0 | -12 | -2 | -17 | -13 |
| Selenge | -23 | 22 | 32 | 14 | 2 | 40 | 33 | 5 | 0 | 5 | 0 | 10 | -46 | -23 | -16 | -101 |
| Female | -31 | 15 | 25 | 5 | 0 | 18 | 27 | 2 | 0 | 4 | 0 | 8 | -37 | -14 | -13 | -71 |
| Tov | -46 | 13 | 35 | 2 | 11 | 30 | 11 | 2 | 0 | 1 | 0 | 43 | -50 | -19 | -30 | -95 |
| Female | -30 | 9 | 22 | 1 | 8 | 23 | 10 | 2 | 0 | 0 | 0 | 26 | -44 | -14 | -17 | -56 |
| Uvs | 88 | 18 | 17 | 27 | 14 | 33 | 72 | 3 | 17 | 3 | 0 | 5 | -63 | -9 | -17 | -32 |
| Female | 53 | 12 | 12 | 5 | 4 | 9 | 65 | 2 | 16 | 2 | 0 | 2 | -44 | -8 | -12 | -12 |
| Hovd | 28 | 55 | 18 | 5 | 8 | 48 | 35 | 1 | 1 | 1 | 1 | 2 | -59 | -5 | -60 | -23 |
| Female | -54 | 20 | 13 | 0 | 0 | 4 | 21 | 0 | 0 | 0 | 0 | 2 | -46 | -3 | -47 | -18 |
| Hovsgol | 71 | 21 | 42 | 9 | 23 | 22 | 59 | 3 | 20 | 7 | 0 | 27 | -69 | -12 | 0 | -81 |
| Female | 71 | 18 | 27 | 5 | 6 | 7 | 56 | 1 | 17 | 6 | 0 | 17 | -52 | -10 | -16 | -11 |
| Hentiy | 29 | 20 | 47 | 4 | 10 | 29 | 21 | 1 | 6 | 16 | 0 | 11 | -30 | -7 | -44 | -55 |
| Female | 10 | 15 | 31 | 4 | 5 | 11 | 21 | 1 | 6 | 6 | 0 | 6 | -25 | -6 | -28 | -37 |
| Darhan | -21 | 27 | 72 | 3 | 17 | 39 | 19 | 4 | 1 | 12 | 2 | 9 | -40 | -40 | -89 | -57 |
| Female | -18 | 24 | 53 | 3 | 7 | 21 | 16 | 2 | 0 | 4 | 2 | 6 | -34 | -27 | -62 | -33 |
| UlaanBaatar | -13 | 134 | 180 | 34 | 48 | 137 | 94 | 9 | 3 | 52 | 0 | 29 | -112 | -253 | -231 | -137 |
| Female | -7 | 111 | 138 | 22 | 29 | 78 | 71 | 4 | 3 | 42 | 0 | 17 | -100 | -170 | -166 | -86 |
| Erdenet | 9 | 11 | 39 | 27 | 10 | 9 | 13 | 3 | 0 | 4 | 0 | 20 | -27 | -33 | -39 | -28 |
| Female | -8 | 10 | 31 | 11 | 2 | 4 | 12 | 1 | 0 | 2 | 0 | 9 | -16 | -23 | -27 | -24 |
| Darkhan | 6 | 7 | 10 | 5 | 7 | 5 | 5 | 1 | 0 | 0 | 0 | 8 | -3 | -11 | -11 | -17 |
| Female | 2 | 4 | 9 | 1 | 3 | 3 | 4 | 0 | 0 | 0 | 0 | 7 | -3 | -7 | -8 | -11 |
| Special | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Female | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 628 | 486 | 808 | 187 | 244 | 570 | 601 | 53 | 77 | 355 | 4 | 198 | -758 | -464 | -677 | -906 |
| Female | 182 | 346 | 577 | 88 | 92 | 224 | 479 | 20 | 38 | 204 | 2 | 120 | -567 | -317 | -593 | -531 |

Source: Ministry of Science and Culture.

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ANNEX 3.8

## EDUCATION SECTOR STAFF SALARIES IN THE CIVIL SERVICE PAY SCALE

| Civil service grade | Monthly salaries (tugrik) | Teaching level |
|---|---|---|
| A-1 | 2,300-3,200 | Cleaner, helper, courier, assistant co[illegible], heating assistant, nurse. |
| A-2 | 2,700-3,500 | Typist, copyist, guard, cook, laboratory assistant doctor, nurse-educator in nursery. |
| A-3 | 2,900-4,200 | Driver, electrician, environment monitor, veterinarian, librarian, teacher of music and dance, assistant kindergarten teachers. |
| A-4 | 3,300-4,400 | Chief clerk, technicians, trained librarian. |
| A-5 | 3,500-4,700 | Secretary of directors, accountant, teachers of kindergartens, primary and secondary schools, vocational schools, and post-secondary schools, director of nursery, senior librarian. |
| B-1 | 3,800-5,100 | Researcher, kindergarten teacher with higher education, library director, engineer, senior accountant, economist, legal advisor. |
| B-2 | 4,000-5,300 | Secondary school teachers with higner education, directors of kindergartens, researcher, doctor. |
| B-3 | 4,200-5,500 | Teacher in technical institutes, educator-expert in secondary schools. |
| B-4 | 4,500-5,800 | Directors of secondary schools, deputy director of vocational schools, assistant teacher in university, researcher of national research center, director of environment monitoring center. |
| B-5 | 4,900-6,100 | Professor of university, senior teacher in post-secondary schools, director of vocational schools, deputy director of college. |
| B-6 | 5,100-6,300 | Senior professor of state university, deputy director of college, senior researcher in research center, director of medical center, principal doctor. |
| B-7 | 5,400-6,700 | Directors of post-secondary schools, principal researcher in research center. |
| B-8 | 5,600-6,900 | Deputy directors of state university, director of institutes, deputy director of President's Office the Academy of Science. |
| B-9 | 6,300-7,600 | Director of University, Vice President of Academy of Science. |

Source: Coopers and Lybrand, p. D1-D3.

ANNEX 4

## INSTRUCTIONAL TIME ALLOCATED TO VARIOUS SUBJECTS IN GRADES 1-10 (HOURS)

| Grade | Mongolian Language | Math | Science | Geography | History | English | Others | Total |
|---|---|---|---|---|---|---|---|---|
| 1 | 9 | 5 | 1 | - | - | - | 9 | 24 |
| 2 | 9 | 5 | 2 | - | - | - | 9 | 25 |
| 3 | 9 | 5 | 2 | - | - | - | 9 | 25 |
| 4 | 9 | 5 | 2 | - | - | - | 9 | 25 |
| 5 | 7 | 5 | 2 | - | 2 | 5 | 8 | 29 |
| 6 | 6 | 5 | 2 | 2 | 2 | 5 | 7 | 29 |
| 7 | 6 | 5 | 6 | 2 | 2 | 3 | 5 | 29 |
| 8 | 5 | 5 | 7 | 2 | 2 | 3 | 5 | 29 |
| 9 | 4 | 6 | 8 | 2 | 1 | 3 | 4 | 28 |
| 10 | 4 | 6 | 10 | - | 2 | 3 | 4 | 29 |
| Total | 68 | 52 | 42 | 8 | 11 | 22 | 69 | 272 |

Source: Ministry of Science and Education.

## GOVERNMENT EXPENDITURES BY FUNCTION, 1990

| | Millions of Tugriks | % of Total Expenditure | % of GDP |
|---|---|---|---|
| Total Expenditures | 6,710.61/ | 100.0 | 64.1 |
| General public services | 329.2 | 4.9 | 3.1 |
| Defense | 473.4 | 7.1 | 4.5 |
| Public order & safety | 102.5 | 1.5 | 1.0 |
| Education | 1,182.9 | 17.6 | 11.3 |
| Health | 569.5 | 8.5 | 5.4 |
| Social security | 801.9 | 11.9 | 7.7 |
| Housing & community amenities | 445.7 | 6.6 | 4.3 |
| Recreation, culture and religious affairs and services | 210.0 | 3.1 | 2.0 |
| Economic affairs | 2,284.7 | 34.0 | 21.8 |
| Other | 303.7 | 4.5 | 2.9 |
| Timing adjustment | 7.1 | 0.1 | 0.1 |

Sources: Ministry of Finance, IMF and World Bank Estimates

1/This table is based on revised IMF estimates of June, 1993. Total government expenditures in this table are slightly different from the number reported in Table 2.1, which was collected in April, 1993.

## EDUCATION EXPENDITURE BY FUNCTION AND BY LEVEL OF EDUCATION, 1991
(Thousand Tugrik)

| | Local/total | |
|---|---|---|
| | Tugrik | % |
| Kindergarten | | |
| Salaries | 138,181 | 41.5 |
| Social security tax | 18,868 | 5.7 |
| Administrative and overhead | 69,089 | 20.7 |
| Travel expenses | 523 | 0.2 |
| Practical expenses | 924 | 0.3 |
| Books, newspapers, magazines | 187 | 0.1 |
| Food subsidies | 92,549 | 27.8 |
| Medicine | 199 | 0.1 |
| Furniture and facilities | 6,431 | 1.9 |
| Clothing and sheets | 2,669 | 0.8 |
| Maintenance and repair | 2,607 | 0.8 |
| Other expenditures | 775 | 0.3 |
| Total | 333,002 | 100.0 |
| Primary and Secondary Schools | | |
| Salaries | 501,160 | 59.7 |
| Social security tax | 65,783 | 7.8 |
| Administrative and overhead | 156,293 | 18.6 |
| Travel expenses | 3,746 | 0.4 |
| Practical subject expense | 3,758 | 0.4 |
| Research and study tour | 0 | 0.0 |
| Books, newspapers, magazines | 3,465 | 0.4 |
| Food (boarding schools) | 74,440 | 8.9 |
| Medicine | 30 | 0.0 |
| Furniture and facilities | 11,069 | 1.3 |
| Clothing and sheets | 2,008 | 0.2 |
| Maintenance and repair | 11,138 | 1.3 |
| Other expenses | 4,012 | 0.4 |
| Savings | 1,993 | 0.2 |
| School lunch | 1,029 | 0.1 |
| Total | 839,927 | 100.0 |

*...Continued*

| | Central | | Local | | Total | |
|---|---|---|---|---|---|---|
| | Tugrik | % | Tugrik | % | Tugrik | % |
| **Vocational Schools** | | | | | | |
| Salaries | 10,071 | 27.0 | 12,996 | 31.6 | 23,066 | 29.4 |
| Social security tax | 1,357 | 3.6 | 1,688 | 4.1 | 3,045 | 3.9 |
| Admin. and overhead | 6,647 | 17.8 | 9,441 | 23.0 | 16,088 | 20.5 |
| Travel expenses | 33 | 0.1 | 161 | 0.4 | 193 | 0.2 |
| Practical subject expense | 2,620 | 7.0 | 1,671 | 4.1 | 4,291 | 5.5 |
| Research and study tour | 0 | 0.0 | 488 | 1.2 | 488 | 0.6 |
| Books, newspapers, journals | 30 | 0.1 | 16 | 0.0 | 46 | 0.1 |
| Food | 11,010 | 29.5 | 4,453 | 10.8 | 15,464 | 19.7 |
| Student stipends | 3,172 | 8.5 | 7,352 | 17.9 | 10,524 | 13.4 |
| Medicine | 21 | 0.1 | 4 | 0.0 | 25 | 0.0 |
| Furniture and facilities | 565 | 1.5 | 396 | 1.0 | 961 | 1.2 |
| Clothing and sheets | 573 | 1.5 | 359 | 0.9 | 932 | 1.2 |
| Maintenance and repair | 484 | 1.3 | 736 | 1.8 | 1,220 | 1.6 |
| Other expenses | 387 | 1.0 | 1,330 | 3.2 | 2,048 | 2.6 |
| Total | 37,301 | 100.0 | 41,092 | 100.0 | 78,393 | 100.0 |
| **Post-secondary Technical Schools** | | | | | | |
| Salaries | 20,171 | 29.5 | 16,399 | 25.2 | 36,570 | 27.4 |
| Social security tax | 3,148 | 4.6 | 4,120 | 6.3 | 7,268 | 5.4 |
| Administrative and overhead | 8,761 | 12.8 | 7,859 | 12.1 | 16,620 | 12.4 |
| Travel expenses | 34 | 0.0 | 216 | 63.1 | 251 | 0.2 |
| Practical subject expense | 4,016 | 5.9 | 2,011 | 3.1 | 6,030 | 4.5 |
| Books, newspapers, magazines | 114 | 0.2 | 62 | 0.1 | 175 | 0.1 |
| Food (dorm) | 2,784 | 4.1 | 720 | 1.1 | 3,504 | 2.6 |
| Student stipends | 27,329 | 40.0 | 30,745 | 47.2 | 58,074 | 43.5 |
| Medicine | 14 | 0.0 | 8 | 0.0 | 21 | 0.0 |
| Furniture and facilities | 871 | 1.3 | 1,028 | 1.6 | 1,899 | 1.4 |
| Clothing and sheets | 123 | 0.2 | 331 | 0.5 | 455 | 0.3 |
| Maintenance and repair | 616 | 0.9 | 1,163 | 1.8 | 1,780 | 1.3 |
| Other expenses | 372 | 0.5 | 499 | 0.7 | 868 | 0.6 |
| Total | 68,356 | 100.0 | 65,162 | 100.0 | 133,518 | 100.0 |
| **Universities** | | | | | | |
| Salaries | 65,577 | 32.1 | 2,612 | 30.3 | 68,189 | 32.0 |
| Social security tax | 11,762 | 5.8 | 590 | 6.8 | 12,353 | 5.8 |
| Administrative and overhead | 27,066 | 13.2 | 2,153 | 25.0 | 29,230 | 13.7 |
| Travel expenses | 141 | 0.1 | 26 | 0.3 | 167 | 0.1 |
| Practical subject expense | 14,782 | 7.2 | 286 | 3.3 | 15,067 | 7.1 |
| Research and study tour | 483 | 0.2 | 48 | 0.6 | 531 | 0.2 |
| Books, newspapers, magazines | 735 | 0.4 | 31 | 0.4 | 766 | 0.4 |
| Food (Boarding Schools) | 3,922 | 1.9 | 0 | 0.0 | 3,922 | 1.8 |
| Student stipends | 63,728 | 31.2 | 2,608 | 30.3 | 66,337 | 31.2 |
| Medicine | 86 | 0.0 | 0.2 | 0.0 | 87 | 0.0 |
| Furniture and facilities | 2,464 | 1.2 | 45 | 0.5 | 2,509 | 1.2 |
| Clothing and sheets | 4,138 | 2.0 | 45 | 0.5 | 4,183 | 2.0 |
| Maintenance and repair | 9415 | 4.6 | 170 | 1.9 | 9,584 | 4.5 |
| Total | 204,312 | 100.0 | 8,614 | 100.0 | 212,925 | 100.0 |

Source: Ministry of Finance.

## EDUCATION BUDGET BY FUNCTION AND BY LEVEL OF EDUCATION, 1993

| | Kindergarten | % | Primary & Secondary | % |
|---|---|---|---|---|
| Salaries | 461,117.3 | 20.6 | 1,614,067.6 | 36.0 |
| Social Security | 62,250.0 | 2.8 | 217,899.1 | 4.9 |
| Admin. & Overhead | 605,070.1 | 27.0 | 1,841,801.1 | 41.1 |
| Travel | 3,976.3 | 0.2 | 18,755.2 | 0.4 |
| Food | 1,052,477.3 | 46.9 | 686,941.5 | 15.3 |
| Medicine | 1,230.0 | 0.1 | 1,922.1 | 0.0 |
| Other Expenses | 56,685.4 | 2.5 | 115,181.5 | 2.6 |
| Total Expenditures | 2,242,776.3 | 100.0 | 4,484,104.2 | 100.0 |
| Total Revenue | 196,281.0 | | 47,492.0 | |
| Subsidies | 2,046,495.3 | | 4,436,612.2 | |

| | Vocational | % | Post-secondary Technical | % |
|---|---|---|---|---|
| Salaries | 53,336.2 | 12.9 | 117,781.5 | 25.0 |
| Social Security | 7,200.4 | 1.7 | 15,900.0 | 3.4 |
| Admin. & Overhead | 227,147.2 | 55.0 | 150,518.8 | 32.0 |
| Travel | 1,919.4 | 0.5 | 1,455.5 | 0.3 |
| Student allowance | 94,268.0 | 22.8 | 189,030.0 | 40.1 |
| Medicine | 29.5 | 0.0 | 49.2 | 0.0 |
| Other Expenses | 6,709.7 | 1.6 | 20,223.5 | 4.3 |
| Total Expenditures | 412,928.4 | 100.0 | 471,019.9 | 100.0 |
| Total Revenue | 22,318.0 | | 23,938.6 | |
| Subsidies | 390,610.4 | | 471,019.9 | |

| | Higher Education | % |
|---|---|---|
| Salaries | 157,302.2 | 28.5 |
| Social Security | 21,236.0 | 3.9 |
| Admin. & Overhead | 117,955.0 | 21.4 |
| Travel | 2,114.4 | 0.4 |
| Student allowance | 216,170.0 | 39.2 |
| Medicine | 393.6 | 0.1 |
| Other Expenses | 36,766.4 | 6.7 |
| Total Expenditures | 551,937.6 | 100.0 |
| Total Revenue | 40,935.0 | |
| Subsidies | 511,002.6 | |

Source: Ministry of Finance.

## EDUCATION BUDGET BY SOURCE AND FUNCTION, 1993
(Thousand Tugrik)

| | Local | % | Central | % | Total | % |
|---|---|---|---|---|---|---|
| Institution's services | 31,788.6 | 9.9 | 100.0 | 0.2 | 31,888.6 | 8.8 |
| Paid services | 267,944.0 | 83.3 | 41,010.0 | 95.8 | 308,954.0 | 84.8 |
| Other revenues | 21,938.0 | 6.8 | 1,700.0 | 4.0 | 23,638.0 | 6.5 |
| Own Revenue | 321,670.6 | 100.0 | 42,810.0 | 100.0 | 364,480.6 | 100.0 |
| Salaries | 2,334,503.6 | 30.2 | 166,592.3 | 25.5 | 2,501,095.9 | 29.9 |
| Social Security | 315,158.0 | 4.1 | 22,490.0 | 3.5 | 337,647.9 | 3.0 |
| Admin. & Overhead | 2,952,737.8 | 38.2 | 109,551.0 | 16.9 | 3,062,288.8 | 36.6 |
| Admin. | 398,115.7 | 5.2 | 14,189.3 | 2.2 | 412,305.0 | 4.9 |
| Electricity | 362,854.3 | 4.7 | 14,276.1 | 2.2 | 377,130.4 | 4.5 |
| Heat | 2,100,328.1 | 27.2 | 69,205.6 | 10.6 | 2,169,533.7 | 25.9 |
| Fuel | 91,439.7 | 1.2 | 11,880.0 | 1.8 | 103,319.7 | 1.2 |
| Travel | 31,738.3 | 0.4 | 3,075.5 | 0.5 | 34,813.8 | 0.4 |
| Food | 1,829,794.7 | 23.7 | 12,093.2 | 1.9 | 1,841,887.9 | 22.0 |
| Student allowance | 295,086.0 | 3.8 | 292,094.0 | 44.9 | 587,180.0 | 7.0 |
| Medicine | 4,136.1 | 0.1 | 393.6 | 0.1 | 4,529.7 | 0.1 |
| Other Expenses | 283,913.5 | 3.7 | 86,667.0 | 13.3 | 370,580.5 | 4.4 |
| Expenditures | 8,047,068.0 | | 692,956.6 | | 8,740,024.5 | |
| Education Expenditures | 7,725,397.4 | 100.0 | 650,146.6 | 100.0 | 8,375,543.9 | 100.0 |

Source: Ministry of Finance.

## EDUCATION BUDGET BY REGION, 1993
(Thousand Tugrik)

| | Revenue | % | Expenditures | % | State Subsidies | % |
|---|---|---|---|---|---|---|
| Arhangay | 8,893.0 | 2.4 | 435,665.9 | 5.0 | 426,772.9 | 5.1 |
| Bayan-Olgiy | 8,261.0 | 2.3 | 332,740.6 | 3.8 | 324,479.6 | 3.9 |
| Bayanhongor | 9,468.0 | 2.6 | 324,412.0 | 3.7 | 314,944.0 | 3.8 |
| Bulgan | 9,533.6 | 2.6 | 264,350.2 | 3.0 | 254,816.6 | 3.0 |
| Gobi-Altay | 8,693.0 | 2.4 | 362,574.3 | 4.2 | 353,881.3 | 4.2 |
| Dornogobi | 7,931.0 | 2.2 | 190,004.0 | 2.2 | 182,073.0 | 2.2 |
| Dornod | 10,226.0 | 2.8 | 247,580.2 | 2.8 | 237,354.2 | 2.8 |
| Dundgobi | 8,997.0 | 2.5 | 217,568.5 | 2.5 | 208,571.5 | 2.5 |
| Dzavhan | 13,090.0 | 3.6 | 426,186.6 | 4.9 | 413,096.6 | 4.9 |
| Ovorhangay | 9,685.0 | 2.7 | 457,470.5 | 5.2 | 447,785.5 | 5.4 |
| Omnogobi | 6,314.0 | 1.7 | 208,231.6 | 2.4 | 201,917.6 | 2.4 |
| Sukhbaatar | 7,092.0 | 2.0 | 176,533.8 | 2.0 | 169,441.8 | 2.0 |
| Selenge | 15,710.0 | 4.3 | 297,572.3 | 3.4 | 281,862.3 | 3.4 |
| Tov | 14,386.0 | 4.0 | 411,126.2 | 4.7 | 396,740.2 | 4.7 |
| Uvs | 10,132.0 | 2.8 | 259,657.4 | 3.0 | 249,525.4 | 3.0 |
| Hovd | 14,161.0 | 4.0 | 301,391.3 | 3.5 | 287,230.3 | 3.4 |
| Hovsgol | 13,884.0 | 3.8 | 422,442.2 | 4.8 | 408,558.2 | 4.9 |
| Hentiy | 8,780.0 | 2.4 | 249,998.2 | 2.9 | 241,218.2 | 2.9 |
| Aimag Total | 185,236.6 | 50.8 | 5,585,505.8 | 63.9 | 5,400,269.2 | 64.5 |
| Darhan | 14,295.0 | 3.9 | 306,904.7 | 3.5 | 292,609.7 | 3.5 |
| Ulaanbaatar | 110,950.0 | 30.4 | 1,954,801.7 | 22.4 | 1,843,851.7 | 22.0 |
| Erdenet | 9,445.0 | 2.6 | 158,777.0 | 1.8 | 149,332.0 | 1.8 |
| Chor | 1,744.0 | 0.5 | 42,779.2 | 0.5 | 41,035.2 | 0.5 |
| City Total | 136,434.0 | 37.4 | 2,463,262.6 | 28.2 | 2,326,828.6 | 27.8 |
| Central Government | 42,810.0 | 11.8 | 692,956.6 | 7.9 | 650,146.6 | 7.8 |
| Total | 364,480.6 | 100.0 | 8,741,725.0 | 100.0 | 8,377,244.4 | 100.0 |

*Source*: World Bank missions to Mongolia in 1992 and 1993.

## LOCAL EXPENDITURES, SELECTED CITIES AND AIMAGS, 1991
(Thousand Tugrik)

| | Total | | Ulaanbaatar | | Darhan | | Erdenet | |
|---|---|---|---|---|---|---|---|---|
| | Tug | % | Tug | % | Tug | % | Tug | % |
| Salaries | 711,405 | 45.7 | 176,867 | 50.4 | 33,033 | 38.4 | 15,434 | 37.5 |
| Social security tax | 96,568 | 6.2 | 23,686 | 6.7 | 5,407 | 6.3 | 2,166 | 5.3 |
| Administrative (utilities, supplies) | 26,3337 | 16.9 | 71,069 | 20.2 | 13,968 | 16.2 | 6,851 | 16.6 |
| Travel (for teachers) | 5,864 | 0.4 | 143 | 0.0 | 112 | 0.1 | 117 | 0.3 |
| Practical subject | 13,135 | 0.8 | 2,971 | 0.8 | 1,358 | 1.6 | 811 | 2.0 |
| Research (study tour) | 536 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Libraries, extracurricular activities | 3,900 | 0.3 | 302 | 0.1 | 29 | 0.0 | 28 | 0.1 |
| Food (boarding schs) | 180,455 | 11.6 | 34,764 | 9.9 | 7,122 | 8.3 | 4,195 | 10.2 |
| Student Stipends | 57,359 | 3.7 | 170 | 0.0 | 13,261 | 15.4 | 976 | 2.4 |
| Medicine (boarders) | 281 | 0.0 | 0 | 0.0 | 34 | 0.0 | 0 | 0.0 |
| Furniture & facilities | 22,316 | 1.4 | 5,715 | 1.6 | 542 | 0.6 | 832 | 2.0 |
| Clothing & Sheet | 6,514 | 0.4 | 1,906 | 0.5 | 373 | 0.4 | 297 | 0.7 |
| Maintenance | 17,287 | 1.1 | 3,706 | 1.1 | 718 | 0.8 | 523 | 1.3 |
| Others | 10,961 | 0.7 | 1,783 | 0.5 | 326 | 0.4 | 313 | 0.8 |
| Investment (building, equipment) | 158,118 | 10.2 | 24,891 | 7.1 | 9,332 | 10.8 | 8,430 | 20.5 |
| Subsidies (school products) | 2,705 | 0.2 | 1,619 | 0.4 | 120 | 0.1 | 0 | 0.0 |
| Food (school lunch) | 1,029 | 0.1 | 173 | 0.0 | 197 | 0.2 | 30 | 0.1 |
| Evening courses | 1,948 | 0.1 | 1,081 | 0.3 | 5.5 | 0.0 | 154 | 0.4 |
| Education activities | 1,726 | 0.1 | 225 | 0.1 | 178 | 0.2 | 0 | 0.0 |
| Total | 1,555,452 | 100.0 | 351,117 | 100.0 | 86,116 | 100.0 | 41,157 | 100.0 |

| | Arhangay | | Sukbaatar | | Central | |
|---|---|---|---|---|---|---|
| | Tug | % | Tug | % | Tug | % |
| Salaries | 29,634 | 42.7 | 16,897 | 45.1 | 36,776 | 44.8 |
| Social security tax | 3,951 | 5.7 | 2,318 | 6.2 | 4,859 | 5.9 |
| Administrative | 9,890 | 14.2 | 5,729 | 15.3 | 16,029 | 19.5 |
| Travel (for teachers) | 281 | 0.4 | 128 | 0.3 | 344 | 0.4 |
| Practical subject expenses | 178 | 0.3 | 122 | 0.3 | 1,059 | 1.3 |
| Research (study tour) | 0 | 0.0 | 0 | 0.0 | 488 | 0.6 |
| Libraries, extracurricular activities | 46 | 0.1 | 25 | 0.1 | 72 | 0.1 |
| Food (Boarding schools) | 8,653 | 12.5 | 5,290 | 14.1 | 11,785 | 14.4 |
| Student allowance (for tech. & high education) | 3,928 | 5.7 | 223 | 0.6 | 1,283 | 1.6 |
| Medicine (boarders) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Furniture & facilities | 491 | 0.7 | 203 | 0.5 | 1,724 | 2.1 |
| Clothing & sheet | 122 | 0.2 | 118 | 0.3 | 427 | 0.5 |
| Maintenance | 555 | 0.8 | 464 | 1.2 | 978 | 1.2 |
| Others | 225 | 0.3 | 89 | 0.2 | 814 | 1.0 |
| Saving | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Investment (building, equipment) | 11,466 | 16.5 | 5,853 | 15.6 | 6,002 | 7.3 |
| Subsidies (school products) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Food (school lunch) | 46 | 0.1 | 33 | 0.1 | 35 | 0.0 |
| Evening courses | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Education activities | 0 | 0.0 | 0 | 0.0 | 438 | 0.5 |
| Total | 69,467 | 100.0 | 37,490 | 100.0 | 82,114 | 100.0 |

Source: Ministry of Finance.

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## LOCAL EXPENDITURES, SELECTED CITIES AND AIMAGS, 1992
(Thousand Tugrik)

| | Arhangay | | Bayanhongor | | Ovorhangay | |
|---|---|---|---|---|---|---|
| | Tug | % | Tug | % | Tug | % |
| Salaries | 26,107.4 | 35.5 | 24,453.6 | 38.2 | 30,099.3 | 37.6 |
| Social Security | 3,679.0 | 5.0 | 3,312.6 | 5.2 | 3,990.1 | 5.0 |
| Admin. & Overhead | 31,389.3 | 42.7 | 23,932.5 | 37.4 | 30,023.8 | 37.5 |
| Travel | 171.7 | 0.2 | 456.6 | 0.7 | 294.8 | 0.4 |
| Practical Work | 267.7 | 0.3 | 262.1 | 0.4 | 234.0 | 0.3 |
| Books | 76.6 | 0.1 | 91.3 | 0.1 | 102.2 | 0.1 |
| Food | 9,406.5 | 12.8 | 7,551.1 | 11.8 | 13,018.3 | 16.3 |
| Furniture | 582.2 | 0.8 | 1,896.5 | 3.0 | 322.7 | 0.4 |
| Clothing | 104.4 | 0.1 | 40.6 | 0.1 | 44.1 | 0.1 |
| Repair & Maintenance | 154.1 | 0.2 | 512.2 | 0.8 | 1,293.1 | 1.6 |
| Other Expenses | 1,555.8 | 2.1 | 1,543.2 | 2.4 | 613.6 | 0.8 |
| Total Expenditures | 73,494.7 | 100.0 | 64,052.3 | 100.0 | 80,036.0 | 100.0 |

| | Sukbaatar | | Selenge | | Ulaanbaatar | |
|---|---|---|---|---|---|---|
| | Tug | % | Tug | % | Tug | % |
| Salaries | 15,859.3 | 38.8 | 28,220.6 | 39.9 | 154,760.4 | 54.9 |
| Social Security | 2,251.4 | 5.5 | 3,830.1 | 5.4 | 19,828.5 | 7.0 |
| Admin. & Overhead | 13,603.3 | 33.2 | 25,752.7 | 36.4 | 86,713.0 | 30.8 |
| Travel | 148.7 | 0.4 | 259.9 | 0.4 | 136.9 | 0.1 |
| Practical Work | 107.2 | 0.3 | 161.6 | 0.2 | 1,717.6 | 0.6 |
| Books | 43.6 | 0.1 | 38.3 | 0.1 | 249.0 | 0.1 |
| Food | 4,538.6 | 11.1 | 5,661.5 | 8.0 | 3,365.3 | 1.2 |
| Medicine | - | - | - | - | 8.9 | 0.0 |
| Furniture | 296.6 | 0.7 | 1,205.5 | 1.7 | 4,143.7 | 1.5 |
| Clothing | 11.2 | 0.0 | 205.4 | 0.3 | 685.4 | 0.2 |
| Repair & Maintenance | 1,269.7 | 3.1 | 2,050.6 | 2.9 | 4,060.8 | 1.4 |
| Other Expenses | 2,796.4 | 6.8 | 3,303.9 | 4.7 | 6,115.2 | 2.2 |
| Total Expenditures | 40,926.0 | 100.0 | 70,690.1 | 100.0 | 281,784.7 | 100.0 |

*Source*: World Bank missions to Mongolia in 1992 and 1993.

## LOCAL BUDGETS, SELECTED CITIES AND AIMAGS, 1993
(Thousand Tugrik)

| | Arhangay | | Bayanhongor | | Ovorhangay | |
|---|---|---|---|---|---|---|
| | Tug | % | Tug | % | Tug | % |
| Salaries | 97,751.9 | 22.4 | 93,142.3 | 28.7 | 92,629.0 | 20.3 |
| Social Security | 13,196.5 | 3.0 | 12,574.2 | 3.9 | 12,504.9 | 2.7 |
| Admin. & Overhead | 211,141.5 | 48.5 | 133,068.7 | 41.0 | 235,922.0 | 51.6 |
| Administration | 11,328.5 | 2.6 | 11,302.7 | 3.5 | 26,441.9 | 5.8 |
| Electricity | 31,206.0 | 7.2 | 23,786.0 | 7.3 | 9,273.6 | 2.0 |
| Heat | 166,851.4 | 38.3 | 95,274.0 | 29.4 | 196,213.5 | 42.9 |
| Fuel | 1,755.6 | 0.4 | 2,706.0 | 0.8 | 3,993.0 | 0.9 |
| Travel | 1,164.2 | 0.3 | 865.0 | 0.3 | 1,318.0 | 0.3 |
| Food | 94,636.6 | 21.7 | 76,502.0 | 23.6 | 97,074.2 | 21.2 |
| Allowance | 8,138.0 | 1.9 | 3,072.0 | 1.0 | 3,768.0 | 0.8 |
| Medicine | 0.0 | 0.0 | 0.0 | 0.0 | 29.5 | 0.0 |
| Other Expenses | 9,737.2 | 2.2 | 5,187.8 | 1.6 | 14,224.9 | 3.1 |
| Total Expenditures | 435,765.9 | 100.0 | 324,412.0 | 100.0 | 457,470.5 | 100.0 |

| | Sukbaatar | | Selenge | | Ulaanbaatar | |
|---|---|---|---|---|---|---|
| | Tug | % | Tug | % | Tug | % |
| Salaries | 55,604.5 | 31.5 | 105,971.8 | 35.6 | 652,239.1 | 33.4 |
| Social Security | 7,506.6 | 4.3 | 14,306.2 | 4.8 | 88,052.3 | 4.5 |
| Admin. & Overhead | 71,379.9 | 40.4 | 93,258.8 | 31.3 | 462,571.3 | 23.7 |
| Administration | 6,317.9 | 3.6 | 3,888.4 | 1.3 | 161,470.8 | 8.3 |
| Electricity | 8,654.2 | 4.9 | 18,369.0 | 6.2 | 50,372.4 | 2.6 |
| Heat | 55,978.8 | 31.7 | 66,150.4 | 22.2 | 222,711.1 | 11.4 |
| Fuel | 429.0 | 0.2 | 4,851.0 | 1.6 | 28,017.0 | 1.4 |
| Travel | 741.4 | 0.4 | 920.0 | 0.3 | 3,600.0 | 0.2 |
| Food | 39,632.9 | 22.5 | 62,701.7 | 21.1 | 458,683.7 | 23.5 |
| Allowance | 0.0 | 0.0 | 9,540.0 | 3.2 | 160,748.0 | 8.2 |
| Medicine | 0.0 | 0.0 | 0.0 | 0.0 | 3,204.6 | 0.2 |
| Other Expenses | 1,668.5 | 1.0 | 10,874.8 | 3.7 | 124,002.3 | 6.4 |
| Total Expenditures | 176,533.8 | 100.0 | 297,573.3 | 100.0 | 1,953,101.3 | 100.0 |

*Source*: World Bank missions to Mongolia in 1992 and 1993.

ANNEX 5.9

## COST PER STUDENT BY REGION AND LEVEL OF EDUCATION IN 1993 BUDGET /a
(Thousand Tugrik)

| | No. of Pupils | % | Budget | % | Per Student Cost |
|---|---|---|---|---|---|
| Kindergarten | | | | | |
| Arhangay | 2,200 | 2.5 | 74,690.2 | 3.7 | 33.95 |
| Bayan-Olgiy | 2,075 | 2.4 | 47,791.8 | 2.3 | 23.03 |
| Bayanhongor | 2,490 | 2.9 | 75,233.5 | 3.7 | 30.21 |
| Bulgan | 2,585 | 3.0 | 66,300.9 | 3.2 | 25.65 |
| Gobi-Altay | 2,520 | 2.9 | 70,476.4 | 3.4 | 27.97 |
| DornoGobi | 2,580 | 3.0 | 50,394.7 | 2.5 | 19.53 |
| Dornod | 3,550 | 4.1 | 68,175.9 | 3.3 | 19.20 |
| Dundgobi | 2,310 | 2.7 | 56,259.1 | 2.8 | 24.35 |
| Dzavhan | 2,700 | 3.1 | 65,648.5 | 3.2 | 24.31 |
| Ovorhangay | 2,805 | 3.2 | 100,548.0 | 4.9 | 35.85 |
| OmnoGobi | 1,870 | 2.2 | 53,531.0 | 2.6 | 28.63 |
| Sukhbaatar | 1,921 | 2.2 | 44,346.8 | 2.2 | 23.09 |
| Selenge | 4,020 | 4.6 | 72,846.4 | 3.6 | 18.12 |
| Tov | 3,380 | 3.9 | 90,328.4 | 4.4 | 26.72 |
| Uvs | 3,080 | 3.6 | 65,154.3 | 3.2 | 21.15 |
| Hovd | 2,375 | 2.7 | 53,484.2 | 2.6 | 22.52 |
| Hovsgol | 3,010 | 3.5 | 85,541.6 | 4.2 | 28.42 |
| Hentiy | 2,910 | 3.4 | 81,238.6 | 4.0 | 27.92 |
| Aimag Total | 48,381 | 55.9 | 1,221,990.0 | 59.7 | 25.59 |
| Darhan | 4,490 | 5.2 | 94,950.3 | 4.6 | 21.15 |
| Ulaanbaatar | 29,860 | 34.5 | 647,752.2 | 31.7 | 21.69 |
| Erdenet | 3,370 | 3.9 | 69,655.1 | 3.4 | 20.67 |
| Chor | 460 | 0.5 | 12,146.9 | 0.6 | 26.41 |
| City Total | 38,180 | 44.1 | 824,504.5 | 40.3 | 22.48 |
| Total | 86,561 | 100.0 | 2,046,495.0 | 100.0 | 23.64 |

*...Continued*

ANNEX 5.9

| | No. of Pupils | % | Budget | % | Per Student Cost |
|---|---|---|---|---|---|
| Primary and Secondary | | | | | |
| Arhangay | 15,,580 | 3.9 | 317,760.6 | 7.2 | 20.40 |
| Bayan-Olgiy | 15,580 | 3.9 | 248,859.6 | 5.6 | 15.97 |
| Bayanhongor | 14,448 | 3.6 | 213,587.0 | 4.8 | 14.78 |
| Bulgan | 10,491 | 2.6 | 153,962.0 | 3.5 | 14.68 |
| Gobi-Altay | 13,428 | 3.4 | 254,027.9 | 5.7 | 18.92 |
| DornoGobi | 9,560 | 2.4 | 102,388.4 | 2.3 | 10.71 |
| Dornod | 16,426 | 4.1 | 135,313.3 | 3.1 | 8.24 |
| Dundgobi | 9,121 | 2.3 | 132,216.3 | 3.0 | 14.50 |
| Dzavhan | 17,793 | 4.5 | 286,289.6 | 6.5 | 16.09 |
| Ovorhangay | 18,617 | 4.7 | 322,564.8 | 7.3 | 17.33 |
| OmnoGobi | 7,640 | 1.9 | 135,508.3 | 3.1 | 17.74 |
| Sukhbaatar | 10,990 | 2.8 | 120,550.2 | 2.7 | 10.97 |
| Selenge | 18,663 | 4.7 | 161,044.4 | 3.6 | 8.63 |
| Tov | 19,690 | 5.0 | 212,709.5 | 4.8 | 10.80 |
| Uvs | 16,579 | 4.2 | 174,584.5 | 3.9 | 10.53 |
| Hovd | 14,970 | 3.8 | 173,213.0 | 3.9 | 11.57 |
| Hovsgol | 14,969 | 3.8 | 301,138.1 | 6.8 | 20.12 |
| Hentiy | 13,660 | 3.4 | 141,323.6 | 3.2 | 10.35 |
| Aimag Total | 258,205 | 65.1 | 3587,041.0 | 80.9 | 13.89 |
| Darhan | 16,491 | 4.2 | 112,386.8 | 2.5 | 6.82 |
| Ulaanbaatar | 109,450 | 27.6 | 644,413.6 | 14.5 | 5.89 |
| Erdenet | 10,269 | 2.6 | 64,579.9 | 1.5 | 6.29 |
| Chor | 2,408 | 0.6 | 28,190.8 | 0.6 | 11.71 |
| City Total | 138,618 | 34.9 | 849,571.1 | 19.2 | 6.13 |
| Total | 396,823 | 100.0 | 4,436,612.0 | 100.0 | 11.18 |

...Continued

| | No. of Students | % | Budget | % | Per Student Cost |
|---|---|---|---|---|---|
| Vocational | | | | | |
| Arhangay | 145 | 1.4 | 7,303.0 | 1.5 | 50.37 |
| Bayan-Olgiy | 301 | 2.9 | 13,996.7 | 2.8 | 46.50 |
| Bayanhongor | 256 | 2.5 | 17,582.9 | 3.5 | 68.68 |
| Bulgan | 345 | 3.3 | 16,641.9 | 3.4 | 48.24 |
| Gobi-Altay | 229 | 2.2 | 11,433.2 | 2.3 | 49.93 |
| DornoGobi | 145 | 1.4 | 7,738.7 | 1.6 | 53.37 |
| Dornod | 432 | 4.2 | 19,511.1 | 3.9 | 45.16 |
| Dundgobi | 275 | 2.7 | 13,002.4 | 2.6 | 47.28 |
| Dzavhan | 288 | 2.8 | 19,476.3 | 3.9 | 67.63 |
| Ovorhangay | 314 | 3.0 | 19,376.8 | 3.9 | 61.71 |
| OmnoGobi | 200 | 1.9 | 7,239.4 | 1.5 | 36.20 |
| Selenge | 562 | 5.4 | 30,617.0 | 6.2 | 54.48 |
| Tov | 462 | 4.5 | 65,996.6 | 13.3 | 142.85/a |
| Uvs | 255 | 2.5 | 6,749.1 | 1.4 | 26.47 |
| Hovsgol | 223 | 2.2 | 14,574.6 | 2.9 | 65.36 |
| Hentiy | 225 | 2.2 | 13,742.2 | 2.8 | 61.08 |
| Aimag Total | 4,657 | 44.8 | 284,981.9 | 57.4 | 61.19 |
| Darhan | 350 | 3.4 | 13,081.5 | 2.6 | 37.38 |
| Ulaanbaatar | 2,223 | 21.4 | 84,244.6 | 17.0 | 37.90 |
| Erdenet | 291 | 2.8 | 8,302.4 | 1.7 | 28.53 |
| Chor | 2,864 | 27.6 | 105,628.5 | 21.3 | 36.88 |
| City Total | 5,728 | 55.2 | 211,257.0 | 42.6 | 36.88 |
| Total | 10,385 | 100.0 | 496,238.9 | 100.0 | 47.78 |

...Continued

| | No. of Students | % | Budget | % | Per Student Cost |
|---|---|---|---|---|---|
| Post-secondary Technical Schools | | | | | |
| Arhangay | 468 | 2.8 | 20,655.5 | 3.3 | 44.14 |
| Bayan-Olgiy | 160 | 0.9 | 7,851.2 | 1.3 | 49.07 |
| Bulgan | 180 | 1.1 | 13,447.0 | 2.2 | 74.71 |
| Gobi-Altay | 435 | 2.6 | 13,522.8 | 2.2 | 31.09 |
| DornoGobi | 481 | 2.8 | 15,689.2 | 2.5 | 32.62 |
| Dornod | 258 | 1.5 | 9,093.8 | 1.5 | 35.25 |
| Dzavhan | 402 | 2.4 | 27,907.8 | 4.5 | 69.42 |
| Selenge | 233 | 1.4 | 12,022.9 | 1.9 | 51.60 |
| Tov | 404 | 2.4 | 17,062.0 | 2.7 | 42.23 |
| Hovd | 215 | 1.3 | 15,743.8 | 2.5 | 73.23 |
| Aimag Total | 3,236 | 19.1 | 152,996.0 | 24.5 | 47.28 |
| Darhan | 1,687 | 10.0 | 49,584.8 | 8.0 | 29.39 |
| Ulaanbaatar | 8,752 | 51.7 | 267,152.8 | 42.8 | 30.52 |
| Erdenet | 25 | 0.2 | 1,286.3 | 0.2 | 51.45 |
| Chor | 10,464 | 61.8 | 318,023.9 | 51.0 | 30.39 |
| City Total | 13,700 | 80.9 | 471,019.9 | 75.5 | 34.38 |
| Total | 16,936 | 100.0 | 624,015.9 | 100.0 | 36.84 |
| Universities | | | | | |
| Hovd | 415 | 3.1 | 40,723.5 | 8.0 | 98.13 |
| Darhan | 229 | 1.7 | 12,591.7 | 2.5 | 54.99 |
| Ulaanbaatar (Central Budget, transferred from UB last yr) | 12,556 | 95.1 | 457,687.4 | 89.6 | 36.45 |
| Total | 13,200 | 100.0 | 511,002.6 | 100.0 | 38.71 |

/a Two vocational schools were transferred to primary and secondary education but the budget remained with vocational education. That is why the per student cost is so high.

Note: Plan based on the exchange rate of $1 = Tug 150.

Source: Ministry of Finance.

ANNEX 5.10

## BUDGET FOR TEXTBOOKS, 1993
(Thousand Tugrik)

| | Total Education Budget | Book Budget | Book Budget As % of Total Education Budget | As % of Total Book Budget |
|---|---|---|---|---|
| Kindergarten | 2,046,495.3 | 370 | 0.0 | 4.2 |
| Primary & Secondary | 4,436,612.2 | 6,600 | 0.2 | 74.2 |
| Vocational | 390,610.4 | 90 | 0.0 | 1.0 |
| Colleges | 471,019.9 | 340 | 0.1 | 3.8 |
| Universities | 511,002.6 | 1,500 | 0.3 | 16.9 |
| Total | 7,855,740.4 | 8,900 | 100.0 | 100.0 |

Source: Ministry of Finance.

ANNEX 5.11

# ESTIMATED EXPENSES FOR PRODUCTION AND PROVISION OF ESSENTIAL TEXTBOOKS, 1993-94

| | Sheets of Paper /a | No. of Students | Manuscript Expenses | Production Expenses | Paper Cost | Transport Cost | Total Cost |
|---|---|---|---|---|---|---|---|
| Mongolian Script I | 9,000 | 55,000 | 56,700 | 898,500 | 1,099,500 | 359,100 | 2,413,800 |
| Mongolian Language I | 5,000 | 55,000 | 31,500 | 499,500 | 619,500 | 199,500 | 1,350,000 |
| Mathematics I | 4,000 | 55,000 | 25,200 | 399,600 | 504,000 | 159,600 | 1,088,400 |
| Reading II | 8,000 | 50,000 | 50,400 | 766,200 | 879,000 | 312,000 | 2,007,600 |
| Mongolian Language II | 6,000 | 50,000 | 37,800 | 574,650 | 659,250 | 234,000 | 150,570 |
| Mathematics II | 4,000 | 50,000 | 22,900 | 363,200 | 458,100 | 145,000 | 989,200 |
| Local Area Studies II | 4,000 | 50,000 | 22,900 | 363,200 | 458,100 | 145,000 | 98,920 |
| Labor Training II | 8,000 | 50,000 | 50,400 | 766,200 | 879,000 | 312,000 | 2,007,600 |
| Mathematics III | 9,000 | 50,000 | 56,700 | 810,750 | 984,000 | 378,000 | 2,229,450 |
| Reading III | 9,000 | 50,000 | 56,700 | 810,750 | 984,000 | 378,000 | 2,229,450 |
| Local Area Studies III | 4,000 | 50,000 | 22,900 | 363,200 | 458,100 | 145,000 | 989,200 |
| Reading IV | 9,000 | 20,000 | 50,400 | 305,600 | 382,100 | 130,500 | 868,600 |
| Reading IV (Cyrillic) | 16,000 | 10,000 | 100,800 | 237,700 | 339,600 | 76,500 | 754,600 |
| Mongolian Language IV | 6,000 | 20,000 | 37,800 | 178,290 | 254,700 | 108,200 | 578,990 |
| Mathematics IV | 8,000 | 20,000 | 5,400 | 237,720 | 339,600 | 153,000 | 735,720 |
| Cyrillic Script IV | 10,000 | 20,000 | 6,300 | 297,200 | 424,600 | 153,000 | 937,800 |
| English V | 8,000 | 40,000 | 5,400 | 475,510 | 679,300 | 306,000 | 1,466,210 |
| Russian Language V | 10,000 | 80,000 | 63,000 | 849,150 | 1,698,300 | 604,800 | 3,215,250 |
| Mongolian Writing VI | 10,000 | 80,000 | 63,000 | 849,150 | 1,698,300 | 604,800 | 3,215,250 |
| Mathematics VI | 12,000 | 70,000 | 75,600 | 891,600 | 1,783,200 | 545,100 | 3,295,500 |
| Mongolian Writing VI | 12,000 | 80,000 | 75,600 | 1,018,950 | 2,037,900 | 623,000 | 3,755,450 |
| Literature | 18,500 | 80,000 | 113,400 | 1,528,400 | 3,056,800 | 669,500 | 5,368,100 |
| World History | 10,000 | 80,000 | 63,000 | 849,150 | 1,698,300 | 612,000 | 3,222,450 |
| Algebra IX | 10,000 | 10,000 | 63,000 | 148,610 | 212,300 | 65,200 | 489,110 |
| Physics IX | 9,000 | 10,000 | 56,700 | 133,700 | 191,000 | 64,100 | 445,500 |
| Biology IX | 9,000 | 10,000 | 56,700 | 133,700 | 191,000 | 64,100 | 445,500 |
| Geometry IX | 9,000 | 10,000 | 56,700 | 133,700 | 191,000 | 64,100 | 445,500 |
| Chemistry IX | 9,000 | 10,000 | 56,700 | 133,700 | 191,000 | 64,100 | 445,500 |
| Geography | 10,000 | 10,000 | 63,000 | 148,610 | 212,300 | 65,200 | 489,110 |
| Mathematics IX | 10,000 | 10,000 | 63,000 | 148,610 | 212,300 | 65,200 | 489,110 |
| Information Science | 6,000 | 10,000 | 37,800 | 89,110 | 127,300 | 59,800 | 314,010 |
| Algebra X | 10,000 | 10,000 | 63,000 | 148,610 | 212,300 | 65,200 | 489,110 |
| Physics X | 10,000 | 10,000 | 63,000 | 148,610 | 212,300 | 65,200 | 489,110 |
| Chemistry X | 8,000 | 10,000 | 54,000 | 118,860 | 109,800 | 62,900 | 405,560 |
| Geography | 10,000 | 10,000 | 63,000 | 148,610 | 212,300 | 65,200 | 489,110 |
| Geometry X | 9,000 | 10,000 | 56,700 | 133,700 | 191,000 | 64,100 | 445,500 |
| Mathematics | 10,000 | 10,000 | 63,000 | 148,610 | 212,300 | 65,200 | 489,110 |
| Information Science | 10,000 | 10,000 | 63,000 | 148,610 | 212,300 | 65,200 | 489,110 |
| Literature | 12,000 | 10,000 | 75,600 | 178,290 | 254,700 | 66,900 | 575,490 |
| Total | 350,500 | 1,325,000 | 2,105,400 | 16,577,810 | 25,580,450 | 8,395,300 | 52,648,960 |

/a One sheet of paper is about 24 pages.

Note: Manuscript + Printing + Transportation cost — Tugrik 27,078,510
Manuscript + Printing + Transportation + Paper cost — Tugrik 52,648,960
Budget allocation — Tugrik 6,600,000

Source: Ministry of Science and Education.

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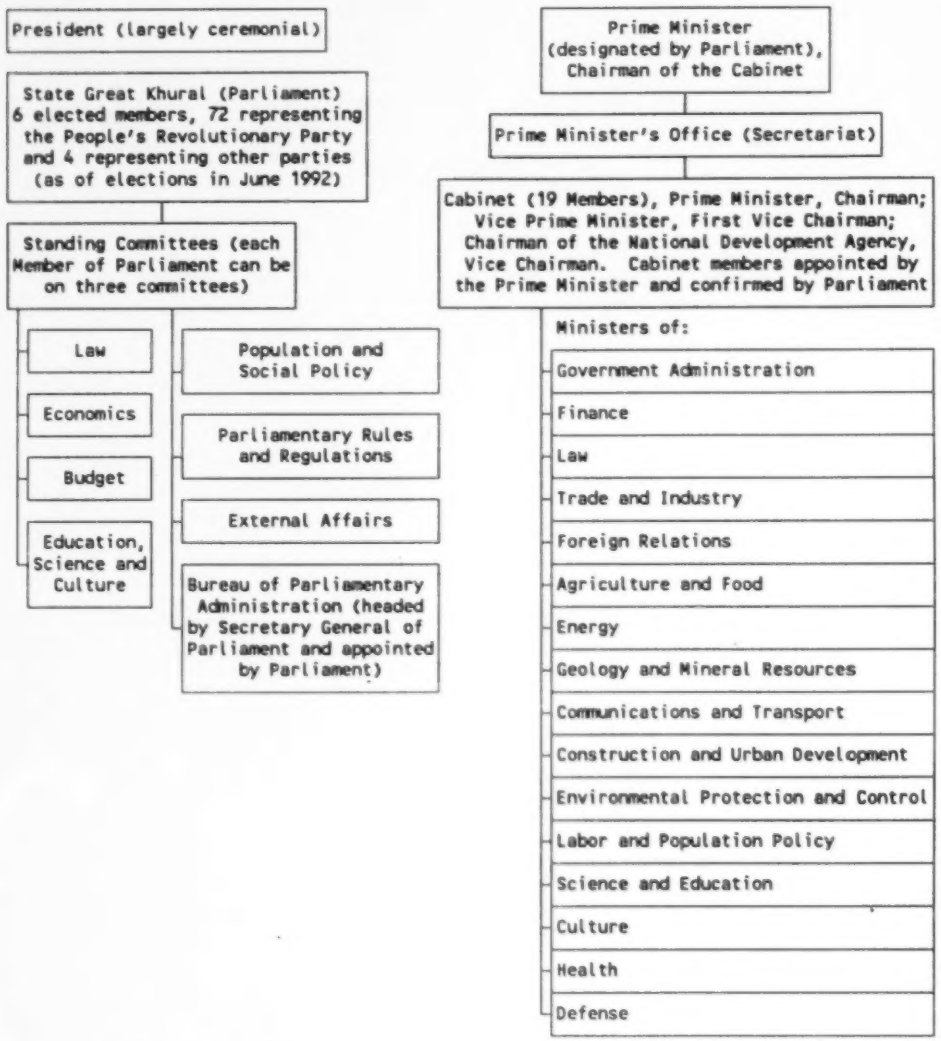
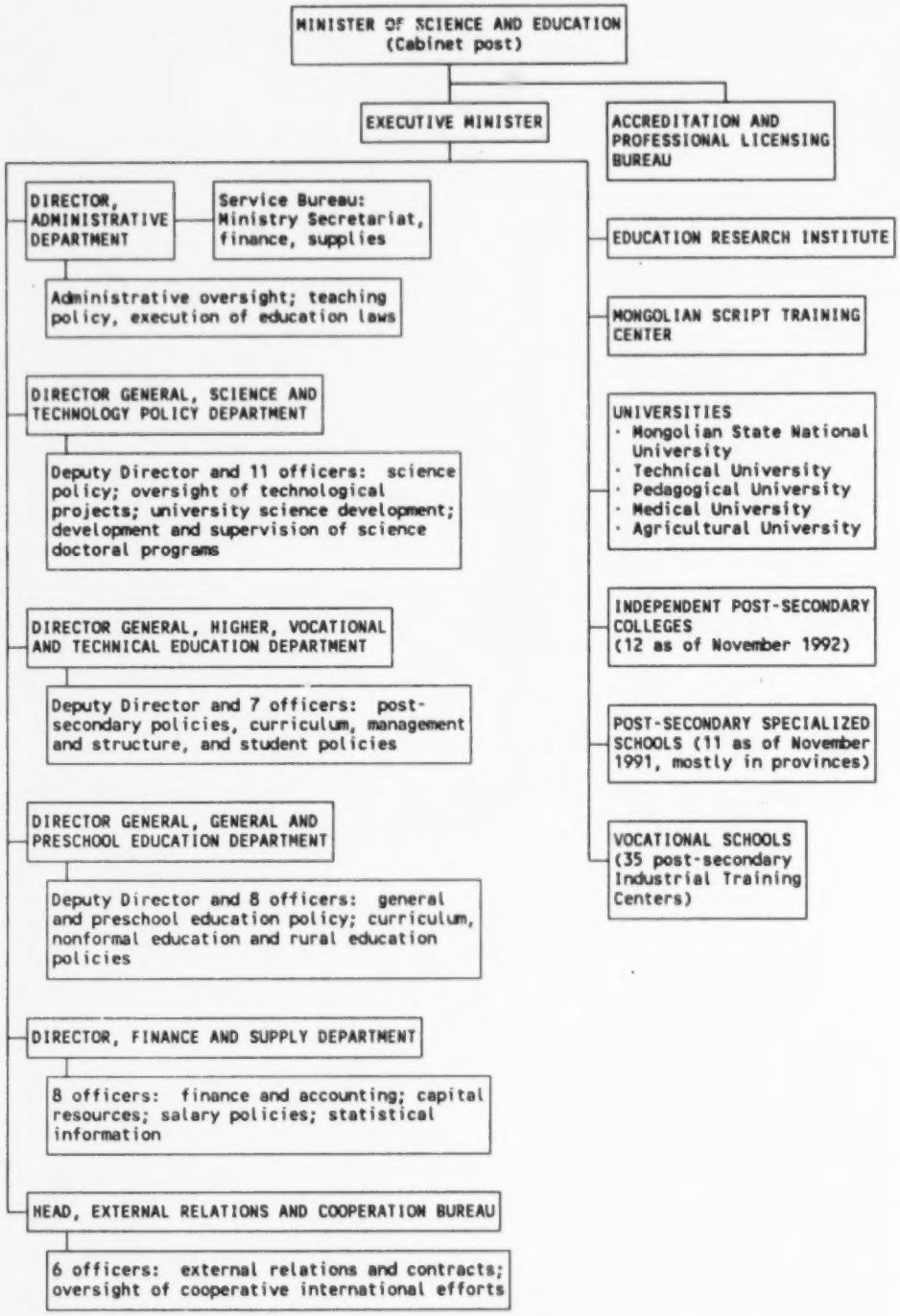
ANNEX 6.1

## THE GOVERNMENT STRUCTURE OF MONGOLIA


President (largely ceremonial)
State Great Khural (Parliament) 6 elected members, 72 representing the People's Revolutionary Party and 4 representing other parties (as of elections in June 1992)
Standing Committees (each Member of Parliament can be on three committees)
Law
Economics
Budget
Education, Science and Culture
Population and Social Policy
Parliamentary Rules and Regulations
External Affairs
Bureau of Parliamentary Administration (headed by Secretary General of Parliament and appointed by Parliament)
Prime Minister (designated by Parliament), Chairman of the Cabinet
Prime Minister's Office (Secretariat)
Cabinet (19 Members), Prime Minister, Chairman; Vice Prime Minister, First Vice Chairman; Chairman of the National Development Agency, Vice Chairman. Cabinet members appointed by the Prime Minister and confirmed by Parliament
Ministers of:
Government Administration
Finance
Law
Trade and Industry
Foreign Relations
Agriculture and Food
Energy
Geology and Mineral Resources
Communications and Transport
Construction and Urban Development
Environmental Protection and Control
Labor and Population Policy
Science and Education
Culture
Health
Defense

Source: Seth Spaulding, "The Education System of Mongolia," January 1993, p. 46.

## THE STRUCTURE OF THE MINISTRY OF SCIENCE AND EDUCATION OF MONGOLIA


MINISTER OF SCIENCE AND EDUCATION (Cabinet post)
EXECUTIVE MINISTER
ACCREDITATION AND PROFESSIONAL LICENSING BUREAU
DIRECTOR, ADMINISTRATIVE DEPARTMENT
Service Bureau: Ministry Secretariat, finance, supplies
Administrative oversight; teaching policy, execution of education laws
EDUCATION RESEARCH INSTITUTE
MONGOLIAN SCRIPT TRAINING CENTER
DIRECTOR GENERAL, SCIENCE AND TECHNOLOGY POLICY DEPARTMENT
Deputy Director and 11 officers: science policy; oversight of technological projects; university science development; development and supervision of science doctoral programs
UNIVERSITIES
· Mongolian State National University
· Technical University
· Pedagogical University
· Medical University
· Agricultural University
DIRECTOR GENERAL, HIGHER, VOCATIONAL AND TECHNICAL EDUCATION DEPARTMENT
Deputy Director and 7 officers: post-secondary policies, curriculum, management and structure, and student policies
INDEPENDENT POST-SECONDARY COLLEGES (12 as of November 1992)
POST-SECONDARY SPECIALIZED SCHOOLS (11 as of November 1991, mostly in provinces)
DIRECTOR GENERAL, GENERAL AND PRESCHOOL EDUCATION DEPARTMENT
Deputy Director and 8 officers: general and preschool education policy; curriculum, nonformal education and rural education policies
VOCATIONAL SCHOOLS (35 post-secondary Industrial Training Centers)
DIRECTOR, FINANCE AND SUPPLY DEPARTMENT
8 officers: finance and accounting; capital resources; salary policies; statistical information
HEAD, EXTERNAL RELATIONS AND COOPERATION BUREAU
6 officers: external relations and contracts; oversight of cooperative international efforts

Source: Seth Spaulding, "The Education System of Mongolia," January 1993, p. 41.



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## THE EDUCATION LAW

**Part II** **The Purpose of the Education Law**

Section 1 The purpose of the Education Law of Mongolia is to provide the people the right to learn.

Section 2 **The Education Law**

1. The Education Law is part of the constitution of Mongolia and the other laws of Mongolia.

2. The Education Law will be consistent with international agreements made by Mongolia.

Section 3 **The Main Principle of Education**

1. Education should be oriented toward humanity and democracy, and should be founded on scientific and cultural tradition.

2. Mongolia will adopt the following principles in pursuing its education policy:

   (1) Education will be under Government supervision and control.

   (2) The Government will not discriminate against any citizens who want to learn.

   (3) The Government will provide basic education for all citizens.

   (4) The Government will provide free elementary, junior secondary, and secondary education.

   (5) The Government will provide alternative and open education.

   (6) The Government will guarantee the right to learn the Mongolian language.

Section 4 **The Rights and Responsibilities of the Citizens in Learning**

1. All citizens have the right to learn in schools, with pay or free, and to pursue professional and science degrees.

2. By the age of 17 years, all citizens should have secondary education.

Section 5 **The Structure of Education**

The educational system consists of early childhood education, basic education, secondary education, and professional education.

Section 6 **Educational Methods**

1. Citizens can have an education through formal or nonformal channels.

2. Organizations and citizens can provide formal and nonformal education.

3. The Government will regulate formal education, but not nonformal education.

Section 7 **Education Credentials**

1. Scientific and teaching organizations will issue certificates to people who have a certain level of education.

2. The Ministry of Science and Education will provide guidelines of providing educational credentials.

**Part II** **The Educational Organization**

Section 8 **The Educational Organization**

1. Educational organizations include scientific and pedagogical organizations, which provide education by formal or nonformal means.

2. The early childhood education organizations, primary, secondary, and professional schools are part of the formal education system.

3. The responsibility of the scientific and pedagogical organizations is to define the scientific basis of teaching and development.

Section 9 **The Early Childhood Education Organization**

Nurseries will take care of children at the age of 3. The kindergarten will teach 3- to 8-year-old children.

Section 10 **Secondary School**

The secondary school will organize teaching.

**Part III**

Section 13 **Educational Management**

1. The state policy on education is determined by a supreme organ of the state and implemented by the Government.

2. Central and local state organizations of education are responsible for educational matters. The Government determines the authority of educational boards.

Section 14 **Professional Control of Education**

The Government approves the authority of the board for professional control.

Section 15 **Administration of Educational Organizations**

1. Headmasters (principals) who are appointed by a central organization of education or its authorized boards manage public schools and other educational institutions.

2. The central organization of education approves the authority of educational boards.

3. An advisory council, which consists of educational officials and representatives of public organizations, can be set up to assist educational institutions. The central organization of education approves the authority of the advisory council.

**Part V**

Section 21 **Duties and Rights of Participants in the Education System**

Teachers have the following rights:

1. To be provided with the opportunity to teach.

2. To select scientific training methodology.

3. To consult with the parents concerning questions of study and students.

4. To assess the knowledge and abilities of students.

5. To select students and organize individual training, and to conduct research work.

Section 22 **The Teacher's Duties**

1. To respect authority and to provide an example of moral conduct.

2. To combine adequate training with practical life and production experiences.

3. To continue to improve their skills and knowledge.

4. To carry out teaching responsibilities.

5. To have pedagogical knowledge.

Section 27 **Duties of Public Organizations**

Public organizations have the following duties:

1. According to the agreement, they must pay tuition fee of students.

2. To assist employees' children to study.

3. The central organization of education will decide whether or not to set up educational institutions in foreign countries.

4. The central organization of education will decide whether or not to allow foreign education institutions to operate in Mongolia.

Section 28 **To Register Educational Institutions and to Stop Their Activities**

1. The central organization of education shall register new institutions on the state list.

2. The central organization of education has the powers to stop the activities of education institutions if they do not satisfy the requirements.

## THE EDUCATION BUDGET PROCESS, 1992

1. The education budget is a consolidation of central and local (city and aimag) governments' budgets. Local governments are expected to make up their own budgets based on their own revenues and estimated expenditures. The central government subsidizes the shortfalls in local budgets.

2. Budgetary planning for the next-year budget, which is the same as the calendar year, begins in August every year. The education departments of aimag and city governments estimate the number of students to be enrolled in primary, secondary, and vocational education in the coming year, and the financial requirement to provide services. At the same time, universities and other institutions of higher learning, also prepare their budgets for submission to the government. The local budget bureau then consolidate the local budgets and submit them to the Ministry of Finance (MOF).

3. MOF uses a formula based on student-to-teacher ratios and per student cost for various levels of education for allocation decisions. For example, the student-to-teacher ratios are 25:1 to 27:1 at the primary level, 16:1 to 18:1 at the secondary level, 15:1 in vocational schools, 14:1 in colleges, and 6:1 to 8:1 in universities and other higher education institutions. The cost per student varies, depending on localities and types of schools. In boarding schools, it can be 50 percent higher than the unit cost in city schools. MOF decides the amount of subsidies, that is the expenditures that cannot be covered by local revenues. It also prepares the central government's education budget that includes stipends for students studying abroad, domestic travel, examination, and teacher retraining. It then consolidates the education budget and submits it to the Cabinet for approval.

ANNEX 7.1

## PROJECTS FUNDED BY DONOR AGENCIES

| Projects | Donor | Status | Amount in $ |
|---|---|---|---|
| Production of Textbooks | Danida | Grant Aid in providing paper | |
| Structure and content of secondary education | Danida | Funded 3 years from September 1992 | $1.7 million |
| Gobi women's education | UNESCO | Seven years from September 1992 | $1.9 million |
| Classical script Grade 1 textbook | Private Japanese Publisher in Japan | Printed all Grade 1 Mongolian language books | |
| Cattle breeders' education | UNESCO, World Church Council | Partially funded from 1991 for 3 years | $70,000 (needed additional $96,000) |
| Improvement of planning, management, finance, and administration of higher education | USIA, ADB, invite other donors | USIA provided travel money to US academics; ADB financed sector studied in 1993 | First phase: $1.5-1.9 million |

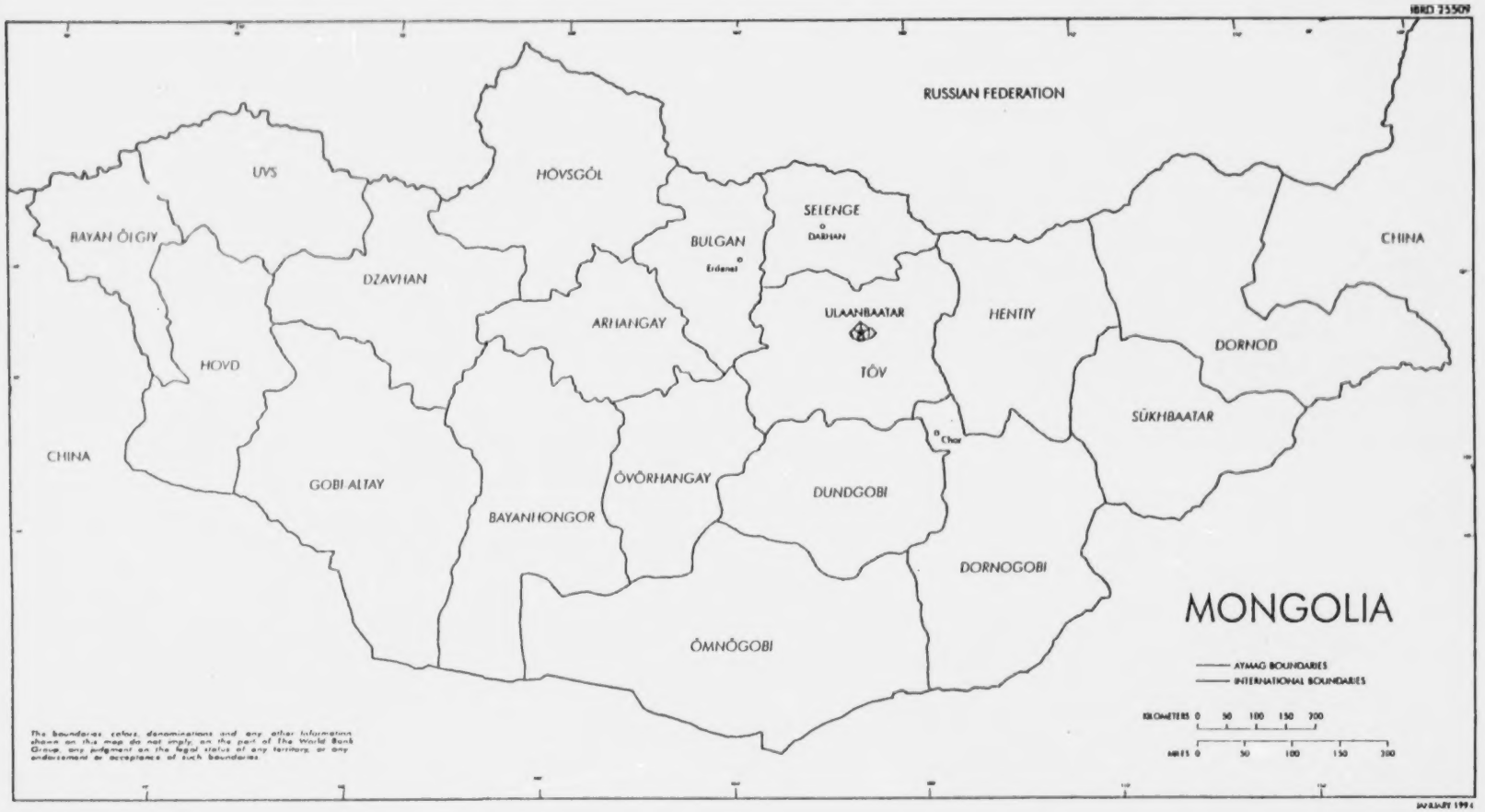
Source: *Higher Education Reform for a Democratic Society and a Market Economy*, 1992. Higher Education Reform Commission.

ANNEX 7.2

## MOSE'S PLAN FOR FOREIGN FUNDING

| Proposed projects | Status |
|---|---|
| Development and production of teaching materials and textbooks for primary, secondary, and higher education. | Request submitted to Japan for printing equipment and paper |
| Improvement on technical education and research in Technical University. | Request submitted to Italian government for laboratory equipment |
| Improvement of science education and research at Mongolian National University, Agricultural University, Medical University, and Pedagogical University. | Request for laboratory equipment submitted to Turkey |
| Improvement of foreign language education at the Mongolian National University and Pedagogical University. | |
| Local production of teaching materials and supplies (workbooks, pencils, ink, chalk, paints). | |

Source: *Higher Education Reform for a Democratic Society and a Market Economy*, 1992. Higher Education Reform Commission

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